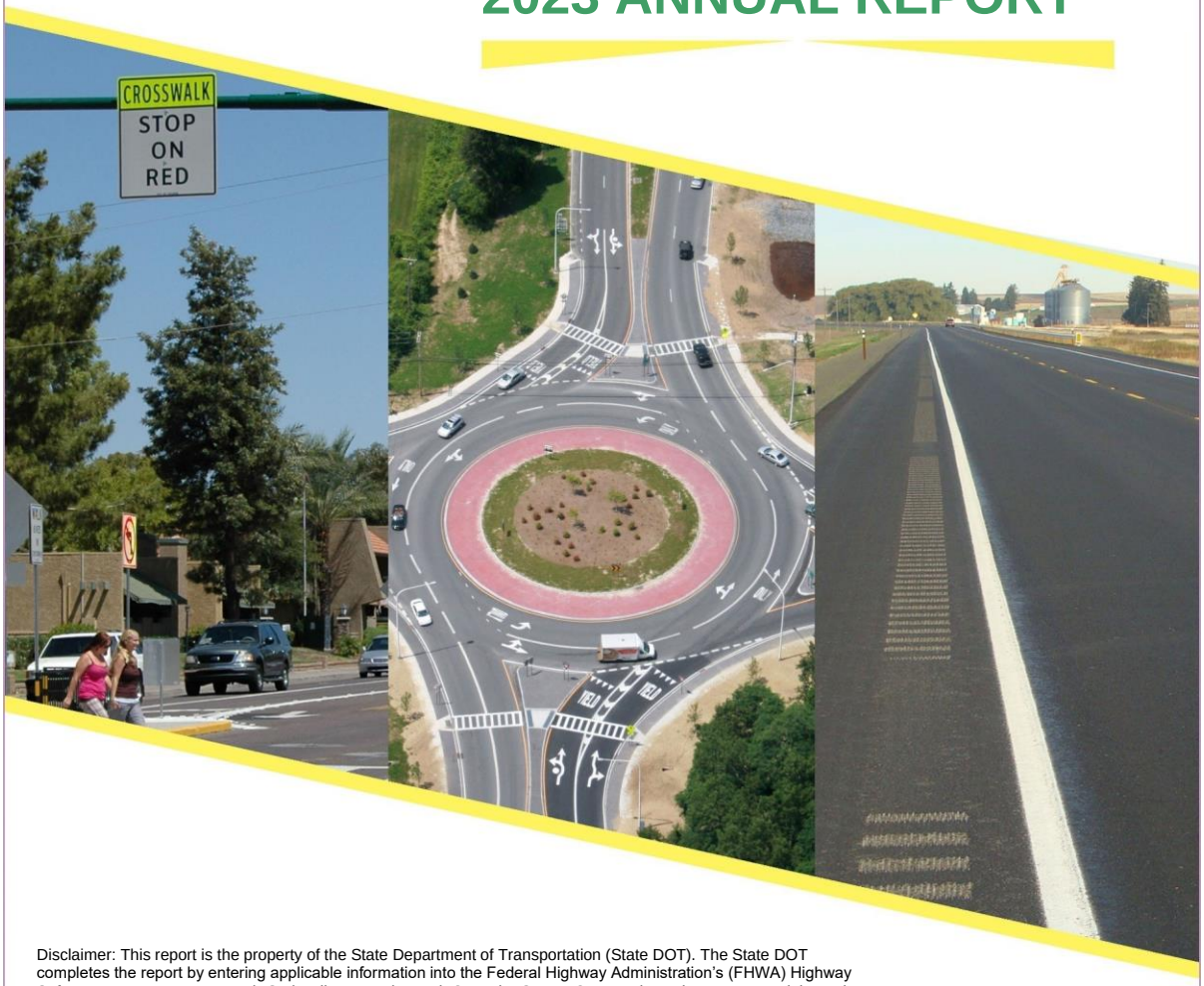
VIRGINIA

HIGHWAY SAFETY IMPROVEMENT PROGRAM

2023 ANNUAL REPORT



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Protection of Data from Discovery Admission into Evidence

23 U.S.C. 148(h)(4) states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section[HSIP], shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.”

23 U.S.C. 407 states “Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.”

Executive Summary

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance.

The Fiscal Year (FY) 2023 Highway Safety Improvement Program (HSIP) report submitted to the Federal Highway Administration (FHWA) summarizes and describes Virginia Department of Transportation's (VDOT's) strategic use of new Infrastructure Investment and Jobs Act (IIJA) for the period of July 2022 to June 2023. The IIJA succeeds the Fixing America's Surface Transportation (FAST) Act and continues the HSIP to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land.

Under U.S. Code 23, Section 154, the Surface Transportation Program and the National Highway Performance Program funds are transferred to be used for HSIP eligible proposals because Virginia does not have all of the required components in its Open Container legislation. As a result, VDOT's HSIP is composed of the following sub-programs which use the mentioned federal funding sources (23 USC Sections):

A. Highway Safety Projects (HSP): Section 148

B. Penalty Transfer-Open Container (OC) Projects: Section 154

C. High Risk Rural Roads (HRRR): Section 148

The Commonwealth of Virginia is committed to developing and maintaining a safe, multimodal transportation system. In Virginia, as HSIP funding will be supplemented with Virginia State funds, HSIP will be referenced as Virginia HSIP or VHSIP. The spending targets for VHSIP funds are based on the level of FHWA funding in future years.

VDOT's HSIP program processes have been developed in consultation with FHWA and in accordance with the current federal transportation funding guidelines, policies, and funding provided. A link to the VHSIP guidelines, safety proposal application submission documents, and other VDOT and FHWA resources are provided online at: http://www.virginiadot.org/business/ted_app_pro.asp

U.S. Code 23, Section 148 Special Rule

For FY 2023, the special rules on **High-Risk Rural Road** (HRRR) as defined in U.S. Code 23, Section 148 (g)(1) apply to Virginia. Additionally, Virginia did not make significant progress in meeting its 2021 safety performance targets for reducing fatalities and its fatality rate, requiring VDOT to submit an HSIP Implementation Plan to FHWA by August 2023. The Implementation Plan documents how VDOT will obligate $64M of HSIP funds in FY2024.

Commonwealth Transportation Board (CTB) Resolutions

It should be noted that this percentage will fluctuate in coming years, as more funding is dedicated to hybrid and spot projects. VDOT uses the systemic approach methodology which provides a consistent framework for addressing risk using the HSIP process by identifying system-wide roadway safety concerns and strategies to address these concerns. Applying a systemic approach to addressing safety is beneficial to proactively

address widespread safety issues and cost-effectively minimize crash potential. Rather than focus on specific crash locations, a systemic approach targets consistent crash trends and common risk factors in crashes throughout the roadway network.

In June 2019, the Commonwealth Transportation Board (CTB) adopted Safety Performance Targets for CY 2020 and found the anticipated safety outcomes associated with the Safety Performance Targets to be unacceptable, and further directed the Office of Intermodal Planning and Investment (OIPI), working collaboratively with VDOT and Department of Motor Vehicles (DMV), to analyze and develop a plan resulting in a net reduction in fatal and serious injury crashes. A key finding from this data-driven analysis demonstrated that systemic and hybrid corridor safety projects provide greater potential crash reduction benefits for lower cost than traditional spot improvement projects, and this finding was presented to the CTB during multiple workshop meetings. In September 2019, the CTB approved an amendment to FY 2020-2025 Six-Year Improvement Program (SYIP) to begin deployment of systemic safety improvements included in an initial Systemic Improvement Plan. This initial Systemic Improvement Plan identified $136.7 million in potential funding through FY 2025 to implement eight systemic countermeasure initiatives at VDOT-maintained roadways.

The **“Phase I” VDOT Systemic Improvement Plan** countermeasures included the following:

· High-Visibility Signal Backplates (HVSB)

· Flashing Yellow Arrow (FYA)

· Pedestrian Accommodations Improvements at Signalized Intersections

· Centerline Rumble Strip

· Edgeline Rumble Strip/Stripes

· Curve Delineation

· Improvements at Unsignalized Intersections

· Pavement Shoulder Wedge *(funded by pavement maintenance)*

The Phase I systemic countermeasure implementation projects were estimated to save 61 lives and 1,174 injuries per year statewide once implemented. This initial Systemic Improvement Plan also:

· Established goals and schedules for deploying the eight systemic countermeasures across VDOT’s network.

· Included a risk-based assessment of eight systemic countermeasures to include the locations, appropriate improvements, cost estimates, and schedules on all public roads.

· Aligned with emphasis areas in Virginia’s Strategic Highway Safety Plan (SHSP).

· Was planned to be updated periodically to advance additional systemic improvements.

The implementation of the Phase I Systemic Improvement Plan is ongoing, with project locations identified and implementation of systemic initiatives recently completed in many locations. Additional information on the initial HSIP Systemic Implementation Plan is provided on-line at:
http://www.ctb.virginia.gov/resources/2019/sep/pres/9.pdf.

Furthermore, in December 2019, the CTB approved the **Highway Safety Improvement Program Project Prioritization Policy** where it states the following:

· VDOT shall develop the next phase of the Implementation Plan for the deployment of systemic and hybrid safety countermeasures across the roadway network, including VDOT and locally-maintained facilities.

· After HSIP funds are set aside for program administration (approximately 5 to 10 percent), the remaining funds shall be programmed to projects with a goal of approximately 80 percent of funds allocated to systemic and hybrid safety improvements over the Six-Year Improvement Program (SYIP).

· To accelerate deployment of systemic and hybrid safety improvements, the CTB will not approve new spot improvement projects until FY 2026-2031 SYIP unless certain conditions are met[1].

The full CTB approval of the HSIP Project Prioritization Policy is provided on-line at:http://www.ctb.virginia.gov/resources/2019/dec/reso/10.pdf.

The initial Systemic Improvement Plan with the eight systemic countermeasure initiatives is currently ongoing with potential project locations identified and implementation of systemic initiatives underway or completed in many locations. Additional information on the initial HSIP Systemic Implementation Plan is provided on-line at: http://www.ctb.virginia.gov/resources/2019/sep/pres/9.pdf.

In January 2022, the CTB passed a resolution that approved an updated investment strategy to govern prioritization and selection of highway safety infrastructure and behavioral safety projects for funding. The resolution stated that VDOT shall develop an infrastructure implementation plan for the **continued deployment of proven systemic and hybrid safety countermeasures across the roadway network**, including VDOT and locally-maintained facilities. The passing of this resolution introduced systemic safety initiatives to be funded for locally-maintained roadways while continuing the systemic safety initiatives on VDOT-maintained roadways. Regarding systemic safety improvements on locally-maintained roadways, the January 2022 resolution provided the following policy details for funding:

· Minimum funding levels for locally-maintained roadways shall be based on the proportion of fatalities on locally-maintained versus VDOT-maintained roads with funds available beginning in Fiscal Year (FY) 2024 for use on systemic safety improvements.

· Funding for systemic infrastructure projects on locally-maintained roads will be awarded through a competitive application process with projects that have a higher return on investment receiving priority.

· VDOT completed a Return-on-Investment (ROI) analysis and worked with VDOT Districts and Localities to identify the following systemic initiatives that will be included in the VHSIP Plan for Localities:

The **“Phase II” VDOT Systemic Improvement Plan** countermeasures included the following:

VDOT Systemic Measures:

1. Two-Lane Rural Roads (TLRR Roadway Departure),

2. Expanded Flashing Yellow (Intersections)

3. Expanded Pedestrian Crossings (Intersections)

Local Systemic Measures

1. Flashing Yellow Arrow (FYA) Signals

2. High-Visibility Signal Backplates (HVSB)

3. Pedestrian Crossings

4. Curve Signage

5. Unsignalized Intersections

6. Road Reconfiguration (Road Diets)

Localities may also submit applications for alternative systemic improvements. For alternative improvements, the applicant must then show an ROI that is comparable to the improvements listed. Lastly, alternative improvements may not be prioritized over the six listed initiatives.

While the January 2022 CTB resolution noted spot improvement projects would not be approved until FY2026 (unless initial systemic and hybrid infrastructure initiatives were fully implemented ahead of schedule), the increase in fatal and serious injury crashes on Virginia roads prompted an earlier return of spot improvements to compliment ongoing systemic improvements. HSIP is currently accepting spot improvement applications, limiting funding to locations on VDOT maintained facilities.

The full CTB approval of the January 2022 Virginia Highway Safety Investment Strategy is provided online at:https://www.ctb.virginia.gov/resources/2022/jan/res/15.pdf.

VDOT is planning to propose an investment plan to the CTB this fall to include a third phase of systemic improvements.

Based on the provision for local systemic initiatives, in both 2022 and 2023 VDOT has offered free technical assistance to localities for performing systemic data analysis, countermeasure identification, network screening, and HSIP application development. While this assistance is available to any locality that submits a request in a timely manner, the primary intent of this assistance is to reach localities that may not have the internal resources or bandwidth to develop these applications. These services are being provided through VDOT on-call consultant services and the Safety Circuit Rider (SCR) Program.

[1] In 2022, CTB and VDOT decided to re-introduce applications for spot improvements sooner than FY 2026.

Virginia Safety Circuit Rider (SCR) Program

The Virginia Safety Circuit Rider (SCR) program is focused on reducing crashes and improving overall roadway safety throughout Virginia. The program includes services such as one-on-one technical assistance, road safety assessments, and safety-focused training. The Virginia Transportation Research Council (VTRC), the Virginia Department of Transportation (VDOT), and the UVA Center for Transportation Studies launched the Virginia Safety Circuit Rider program to improve safety on the 11,000 miles of roadways maintained by cities, towns, and local agencies in Virginia.

During FY 22, the Safety Circuit Rider Program embarked on piloting the Road Safety Champion Program, which is an initiative of the National Center for Rural Road Safety to reduce fatal and serious injuries on rural and urban roads. We continued this during FY 23. Virginia remains the only state currently piloting the program.

Virginia's Strategic Highway Safety Plan

In 2022, VDOT completed a multi-agency and multi-disciplinary update of the Commonwealth's Strategic Highway Safety Plan (SHSP), which was approved by FHWA's Virginia Division. The SHSP continues to guide VDOT’s coordination with safety partners and implementation of engineering strategies, driving investment decisions focused on reducing death and injuries.

At present, Virginia's HSIP is structured to focus on the SHSP infrastructure safety emphasis areas that may be improved with low-cost minimal environmental impact (e.g., project has no or minimal right of way costs) engineering countermeasures, namely:

A. Intersection geometry and traffic control

B. Roadway and roadside improvements

C. Bicycle and pedestrian risk reductions

Data-Driven Decision-Making on Transportation Safety

VDOT emphasizes data-driven decision-making to improve transportation safety in the Commonwealth. One example of VDOT’s data driven approach is the use of the Highway Safety Manual (HSM) Safety Management System methods. The following are some of the ways that VDOT employs use of HSM methodologies:

Evaluation of Safety Projects

VDOT regularly performs a statewide before-and-after evaluation of all eligible safety projects. To effectively perform this evaluation, VDOT invests in the collection/maintenance of robust project-level data. They coordinate with Districts on a quarterly basis to update the status of all HSIP funded projects, including implementation status and specific locations. This can be particularly challenging for systemic projects, where low-cost improvements are implemented across the Commonwealth. This evaluation also helps to guide the identification of future safety projects.

Identification of Future Safety Projects

As noted previously, VDOT employs the use of the HSM methodologies to identify future safety projects/initiatives. This is evident by the iterative phasing of systemic treatments. Using robust network screening and safety studies, VDOT identifies treatments that align with the SHSP emphasis areas and performs a cursory and then in-depth benefit-cost evaluation. For local systemic projects, or VDOT spot projects, both of which are a competitive process, VDOT has created/maintained a state-preferred CMF list to use for economic evaluation. This provides an equitable and quantifiable way of selecting those projects that provide the greatest safety benefits per dollar spent.

Safety Performance Functions

To enhance VDOT’s data-driven decisions, particularly in regard to the use of public funding for focused safety improvements, but also for screening all capital projects (SMART SCALE), VDOT developed state-specific Safety Performance Functions (SPFs) and prioritized a list of locations with the largest Potential for Safety Improvements (PSI). The use of SPFs and PSI for network screening and project prioritization are well documented throughout the HSM as the most robust and defendable method.

VDOT's comprehensive set of state-specific SPFs cover 98 percent of its state-maintained roadway locations. The impetus for creating this unique dataset and analytical toolbox arose from the decision that AASHTOWare Safety™ did not adequately meet the needs for VDOT roadways. VDOT developed state-specific SPFs using historical crash locations, traffic volumes, and roadway inventory layers. SPF developers worked collaboratively alongside engineers to evaluate whether each SPF was implementable for all types of improvements (spot, corridor, and systemic). To date, VDOT has developed SPFs for all roadway segment, intersection and interchange area site types.

For the development of its PSI data, VDOT incorporates the comparisons of actual- to predicted-crash frequencies in its network screening. The top 100 intersections and top 100 miles of segments with the largest PSI annually are then published for use by VDOT staff and safety partners for HSIP planning and project prioritization. This list is sent to the district engineers, who can then determine which site(s) to prioritize based on their practical experience and knowledge of the area.

Benefits of VDOT's data-driven approach, such as the creation of state-specific SPFs and PSIs, include:

· Streamlined prioritization of systemic countermeasure implementation locations at a District-level

· Use of public funding in a more cost-effective manner

· Measure quantifiable benefits for both systemic and spot improvements

· Program transparency and response to public comments or concerns

The state-specific SPFs and PSIs are useful beyond just HSIP efforts and are also used to develop project prioritization in VTran's Long-Range Transportation Plan (VTrans2040) and Statewide Project Prioritization (Mid-term needs for SMARTSCALE project screening). VTrans2040, completed in January 2018, is a major milestone in a performance-based planning framework. It established a direct link between planning (VTrans) and funding (SMARTSCALE). SMARTSCALE is a statewide program that distributes funding based on transparent and objective evaluation of projects to effectively support the Commonwealth achieve its transportation goals. In the SMARTSCALE application process, data-driven safety analysis is one of the weighting factors in the selection process, and a project with high PSI is more likely to be screened as meeting a safety need and receive a higher score for Safety than that of lower PSI.

The SPF development team conducts training (including an annual "roadshow" to all nine districts) and hosts webinars to ensure district engineers understand the methodology and how to use the SPFs. VDOT has not mandated the use of SPFs and PSIs by the Districts because the process of introducing a new methodology takes time. However, the district engineers are aware that it is the preferred method for network screening.

[1] VDOT defines a hybrid project as a combination of spot and systemic items which can be systematically applied. One example of a hybrid project is integrating shoulder widening (spot) with rumble strips (systemic).

Introduction

The Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. As per 23 U.S.C. 148(h) and 23 CFR 924.15, States are required to report annually on the progress being made to advance HSIP implementation and evaluation efforts. The format of this report is consistent with the HSIP Reporting Guidance dated December 29, 2016 and consists of five sections: program structure, progress in implementing highway safety improvement projects, progress in achieving safety outcomes and performance targets, effectiveness of the improvements and compliance assessment.

Program Structure

Program Administration

Describe the general structure of the HSIP in the State.

VDOT Central Office is responsible for establishing the process and conducting network screening, scoring, and selection of HSIP systemic improvement projects. VDOT Districts are responsible for further evaluation of the selected HSIP project locations for feasibility based on local knowledge and data-driven analysis. Once the final HSIP projects are prioritized and selected by Central Office, the selected HSIP projects are included in Virginia’s Six-Year Improvement Program (SYIP), which is then presented to the Commonwealth Transportation Board (CTB) for approval. Once the HSIP projects are approved, programmed, and have received allocated funds, the HSIP staff monitor the projects from scoping through construction to the final voucher. The project monitoring process consists of tracking changes that occur to the following functions: advertisement dates, funding authorization dates, engineer’s estimates, and expenditures. Cost, schedule, and scope are monitored and measured to ensure that the HSIP projects are being delivered on time and on budget. HSIP project schedules and cost both directly affect the Federal Strategy and VDOT’s ability to meet their Obligation Authority for the HSIP Program.

The HSIP projects are programmed through Virginia's Six-Year Improvement Program (SYIP). HSIP projects in the SYIP are programmed by Fiscal Year (FY) with allocations for each specific phase of project development/implementation. Based on these phases, HSIP projects in the SYIP are tracked internally across appropriate divisions.

Roles in Identifying Projects/Improvement Locations

The primary objective of the Highway Safety Improvement Program (HSIP) is to identify and improve locations where there is a high concentration, or risk, of vehicle crashes that result in deaths or injuries. HSIP staff within Central Office conduct network screening for the engineering emphasis areas in Virginia's Strategic Highway Safety Plan (SHSP). After conducting network screening, HSIP staff fulfill transportation safety planning requirements by both producing maps/inventories for systemic improvement implementation locations (for VDOT roadways), maps for the Pedestrian Safety Action Plan (bit.ly/VDOTPSAP) for pedestrian treatments, and map plus listings of the largest Potential for Safety Improvement (PSI) on VDOT maintained intersections and segments and also conducting a broader statewide systemic analysis. Further, other systemic analysis is conducted by HSIP and/or District staff for intersection and roadway departure treatments. The network information is distributed to District staff, and each District Engineer determines which site(s) to prioritize based on their practical experience and knowledge of the area. Safety proposals are not limited to the locations that are identified by HSIP staff. Detailed crash analysis and site evaluation is typically conducted by District staff through a documented engineering study or Road Safety Assessment (RSA).

Localities may also submit applications for alternative systemic improvements. Localities can identify projects and improvement locations. However, both 2022 and 2023, VDOT has offered free technical assistance to localities for performing systemic data analysis, countermeasure identification, network screening, and HSIP application development. While this assistance is available to any locality that submits a request in a timely manner, the primary intent of this assistance is to reach localities that may not have the internal resources or bandwidth to develop these applications. These services are provided through VDOT on-call consultant services and the Safety Circuit Rider (SCR) Program.

Roles in HSIP Project Implementation

VDOT Districts are responsible for implementation/administration of HSIP projects on VDOT roads within their Districts. Localities are also responsible for implementation/administration of HSIP projects on local roads within their jurisdiction. However, localities can also request that their VDOT District administer their projects for them. This request may be made if the locality lacks the staffing capacity to administer the projects, or if they have found it challenging to administer federal projects successfully. If a locality would like the VDOT District to administer the project, that coordination typically happens either prior to or during the application phase of the HSIP project.

Where is HSIP staff located within the State DOT?

Operations

How are HSIP funds allocated in a State?

- Formula via Districts/Regions
- Other-Systemic Approach

Describe how local and tribal roads are addressed as part of HSIP.

Local roads account for approximately 40 percent of all crashes and 20 percent of all fatal and serious injury crashes on Virginia's highways. Local safety projects are targeted to receive up to 20 percent of Virginia's HSIP funds for implementation of safety projects. VDOT has been providing the state-match to these safety projects for the past several years.

The safety proposals for local roads are required to follow the same HSIP Implementation Guidelines as the safety proposals for VDOT roads. The HSIP Systemic Implementation Plan that implemented in FY 2020 states that the HSIP funds are to be allocated based on risk-based locations of systemic safety improvements in VDOT's initial Systemic Implementation Plan. Also, the initial Systemic Implementation Plan lays out the funding process for local projects as described below:

· Approximately 80 percent of available HSIP funds shall be allocated to systemic safety improvements over the six-year improvement program.

· Minimum funding levels for locally owned roadways shall be based on proportion of fatalities between VDOT and locality-maintained roads (i.e., approximately 20%).

· The proposed Funds for systemic safety improvement on locality maintained or owned roads are available beginning in FY 2024 thru FY 2027

· The SMART Portal will open to receive local agency's applications for HSIP funding towards systemic improvements.

· Applications are encouraged for the systemic treatments that were presented to the Commonwealth Transportation board (CTB) in December 2021.

· The funding will be awarded through a competitive application process, with ROI and other factors used to prioritize.

· VDOT has developed guidelines and implementation criteria for screening, scoring and selection of local projects.

The current local systemic measures that were approved by the CTB include the following:

1. Flashing Yellow Arrow (FYA) Signals

2. High-Visibility Signal Backplates (HVSB)

3. Pedestrian Crossings

4. Curve Signage

5. Unsignalized Intersections

6. Road Reconfiguration (Road Diets)

Localities may also submit applications for alternative systemic improvements. For alternative improvements, the applicant must then show an ROI that is comparable to the improvements listed. Lastly, alternative improvements may not be prioritized over the six listed initiatives.

All roads within Tribal communities are owned/maintained by VDOT. As such, Tribal communities are able to work with VDOT Districts to request safety improvements on those portions of roadway.

VDOT assists localities and tribal communities by publishing Virginia's crash data from VDOT's Power BI crash analysis tool. VDOT's Power BI crash analysis tool consists of crash data reported to the Virginia Department of Motor Vehicles (DMV). The DMV owns and maintains the main source of the crash data. This crash analysis tool enables localities and tribal communities to perform safety analyses, project prioritization, and project selection.

Based on the provision for local systemic initiatives, in both 2022 and 2023 VDOT has offered free technical assistance to localities for performing systemic data analysis, countermeasure identification, network screening, and HSIP application development. While this assistance is available to any locality that submits a request in a timely manner, the primary intent of this assistance is to reach localities that may not have the internal resources or bandwidth to develop these applications. These services are being provided through VDOT on-call consultant services and the Safety Circuit Rider (SCR) Program.

Virginia Safety Circuit Rider (SCR) Program

The Virginia Safety Circuit Rider (SCR) program is focused on reducing crashes and improving overall roadway safety throughout Virginia, with a focus on providing training and technical assistance to localities. The program includes services such as one-on-one technical assistance, road safety assessments, and safety-focused training. The Virginia Transportation Research Council (VTRC), the Virginia Department of Transportation (VDOT), and the UVA Center for Transportation Studies launched the Virginia Safety Circuit Rider program to improve safety on the 11,000 miles of roadways maintained by cities, towns, and local agencies in Virginia.

Examples of services offered through the program include:

· Crash data retrieval and evaluation

· Transportation safety training

· Roadway safety assessments

· Safety-related information and resources clearinghouse

The SCR team has coordinated with approximately 30 cities, towns, and counties throughout Virginia. Crash data extraction and analysis was completed for approximately 20 localities in 2022. In 2023, SCR was tasked to identify up to four (4) localities to conduct a roadway safety assessment. As such, the SCR team is completing Road Safety Assessments for the Town of Abingdon, City of Virginia Beach, City of Fredericksburg, and City of Lexington.

The SCR team combines both in-person and virtual options to deliver roadway safety training. The SCR team delivered 48 half-day workshops and 34 full-day workshops this calendar year, reaching 880 students and generating 4,608 contact-hours. The team also conducted four roundtable sessions, which included Safe Routes to School, Crash Data Tools, Local Road Safey Plans and the Road Safety Champion Program, and reached approximately 178 individuals.

During FY 22, the Safety Circuit Rider Program embarked on piloting the Road Safety Champion Program, which is an initiative of the National Center for Rural Road Safety to reduce fatal and serious injuries on rural and urban roads. We continued this during FY 23. Virginia remains the only state currently piloting the program. To become a Road Safety Champion students must complete seven (7) core subjects and either seven (7) subjects in Maintenance and Construction or six (6) subjects in Planning and Engineering. Virginia currently has over 200 candidates registered in the program. Thirty (30) people have completed the training and are official Road Safety Champions under our program. Some of the 20 classes offered in the program include:

· Introduction to Road Safety

· Local Road Safety Plans

· Countermeasures for Road Safety

· Systemic Safety Project Selection Tool

· Worker Safety

· Maintaining a Safer Roadway

Identify which internal partners (e.g., State departments of transportation (DOTs) Bureaus, Divisions) are involved with HSIP planning.

- Design
- Districts/Regions
- Local Aid Programs Office/Division
- Operations
- Planning

- Traffic Engineering/Safety

Describe coordination with internal partners.

In Fall 2022, the Commonwealth Transportation Board decided to merge the former Operations Division and Traffic Engineering Division. Now known as the Traffic Operation Division (TOD), its mission states, “Through Outstanding customer service and innovative technology, the Traffic Operation Division serves the traveling public through providing the highest standards in traffic safety, operational efficient, and reliability of the transportation system”. Central Office Traffic Operation Division (COTOD) HSIP staff communicates with District staff regarding HSIP activities, such as sharing information on requirements, emphasis areas, prioritization, funding, and safety data. In FY 2023, VDOT COTOD HSIP staff have been in frequent coordination through monthly office hour meetings with District HSIP staff to discuss project progress, issues, concerns, technical support, and partnerships. Also, to track HSIP progress, COTOD works with District HSIP staff to develop and maintain inventories of implementation progress by location for the initial eight systemic countermeasure initiatives. The inventories are mapped in ArcGIS, and then published as web maps on VDOT’s ArcGIS Online account.

VDOT emphasizes the importance of a data-driven decision-making approach to improve safety in the Commonwealth of Virginia. Putting this emphasis into practice, VDOT developed state-specific Safety Performance Functions (SPFs) and ranked intersections and segments throughout Virginia by largest Potential for Safety Improvements (PSI). The SPF and PSI analyses are accessible to District staff as well as the general public through VDOT’s Open Data Portal .

VDOT also uses its Strategically Targeted Affordable Roadway Solutions (STARS) Program, managed by the Transportation Mobility and Planning Division, to address congestion and safety concerns throughout the Commonwealth. STARS projects typically result in multiple recommended improvements that may be eligible for funding and implementation under maintenance budgets, applications in the SMART SCALE process, applications for the HSIP, State of Good Repair budgets, and/or applications for revenue sharing.

The HSIP projects are programmed through Virginia's Six-Year Improvement Program (SYIP). HSIP projects in the SYIP are programmed by Fiscal Year (FY) with allocations for each specific phase of project implementation. HSIP projects in the SYIP are tracked internally across appropriate divisions during their relevant phase of the project.

Identify which external partners are involved with HSIP planning.

- FHWA
- Local Government Agency
- Other-District/Design/Pe and Planning Staff
- Other-Virginia Local Technical Assistance Program (LTAP)

Describe coordination with external partners.

VDOT Districts are responsible for communicating with localities regarding any HSIP related projects, and each district office has its own local liaison. All external local partners must coordinate with their Local Liaison for the development and submission of a safety proposal. In addition, VDOT’s Local Technical Assistance Program (LTAP) provides technical workshops, seminars, and short courses covering transportation related topics for local government staff.

VDOT participates in the Local Programs Workshop with local government representatives every year. The focus of this workshop is to communicate with external stakeholders on various HSIP information and tools, such as reviewing the information on funding eligibility, the process of applying for appropriate safety funding,

application and project selection process, and available safety data and resources. In 2023, VDOT held several meetings and roundtables in co-ordination with Safety Circuit Rider (SCR) program covering topics such as HSIP program overview, systemic safety, and HSIP application submission process to prepare local agencies in submitting their HSIP applications when HSIP funding opens up.

VDOT emphasizes the importance of a data-driven decision-making approach to improve safety in the Commonwealth of Virginia. In order to make data-driven decisions on the use of public funding for safety improvements, VDOT developed a state-specific Safety Performance Functions (SPFs) and a prioritized list of intersections and segments with the largest Potential for Safety Improvements (PSI). The SPF and PSI analyses are shared across the districts and localities. Along with other safety data and analysis, the SPF and PSI analyses can be used for project consideration and selection. The localities also have full access to crash data from VDOT's Power BI crash analysis tool. VDOT Power BI crash analysis tool pulls the crash data from Virginia Department of Motor Vehicles (DMV)'s crash data source as DMV owns and maintains the main source of the crash data.

VDOT coordinates with local government partners, such as Metropolitan Planning Organizations (MPOs) and Planning District Commissions (PDCs), through meetings and webinars to set an obtainable target that coincides with VDOT's Strategic Highway Safety Plan (SHSP) goals.

Virginia's Commonwealth Transportation Board (CTB) oversees transportation projects and initiatives for the Commonwealth of Virginia. VDOT has the responsibility for construction, maintenance, and operation of Virginia's roadways under the overall guidance of the CTB. VDOT Central Office HSIP staff coordinates with CTB staff for prioritization of HSIP projects and through final HSIP project selection.

Describe other aspects of HSIP Administration on which the State would like to elaborate.

According to the 2017 VDOT Pedestrian Crash Assessment: Analysis of Pedestrian Crashes Occurring Between 2012-2016, pedestrian fatalities in Virginia have increased by 19 percent since 2012. In response to the continuing increase in pedestrian fatality rates, the VDOT Traffic Engineering Division completed an inaugural statewide Pedestrian Safety Action Plan (PSAP) in early 2018. This report documents the process VDOT followed to complete the PSAP and considers ways to improve pedestrian safety and ultimately reduce pedestrian fatalities throughout the Commonwealth. In 2020, VDOT updated the plan, PSAP-2, with most recent crash and transportation equity data, generating new priority corridors and crash clusters. The corridors were screened based upon various factors including traffic volumes, speed, transit proximity, vehicle ownership levels by household, state Health Opportunity Index (HOI), and etc. In February 2022, the new version 3 of PSAP became available with most recent crash data between 2016 and 2020 with two notable changes: 1) both pedestrian and bicycle crashes are used in the updated screening analysis, and 2) in addition to the statewide and regional priority corridors, the Version 3 also provides district-level priority segments.

VDOT worked with a multidisciplinary group of stakeholders to identify and address pedestrian safety concerns through a data driven approach (bit.ly/VDOTPSAP). This approach included identifying and addressing locations with a history of pedestrian safety crashes along with proactively addressing pedestrian crash risk through the identification of priority corridors. The PSAP report and mapping complements other pedestrian safety efforts in the Commonwealth, including the new 2022–2026 Strategic Highway Safety Plan (SHSP), VDOT HSIP, SMART SCALE, Transportation Alternatives Program, and Safe Routes to School program. Local, regional, and state agencies should review this report to identify and implement potential countermeasures, update design policies, and supplement other State pedestrian safety initiatives.

As part of the Vulnerable Road User Safety Assessment due in November 2023, the Pedestrian Safety Assessment and PBSAP version 5 updates will be conducted. The PBSAP will be used to update VTrans mid-term needs for SMART SCALE project planning and safety screening for eligibility.

Program Methodology

Does the State have an HSIP manual or similar that clearly describes HSIP planning, implementation and evaluation processes?

Yes

VDOT is currently in process of updating the VDOT HSIP Implementation Manual.

Select the programs that are administered under the HSIP.

- HRRR
- HSIP (no subprograms)
- Local Safety

Program: HRRR

Date of Program Methodology:8/22/2018

What is the justification for this program?

- FHWA focused approach to safety

What is the funding approach for this program?

Funding set-aside

What data types were used in the program methodology?

Crashes

- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume

Roadway

- Functional classification

What project identification methodology was used for this program?

- Equivalent property damage only (EPDO Crash frequency)
- Excess expected crash frequency using SPFs

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

Yes

How are projects under this program advanced for implementation?

- Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Relative Weight in Scoring

Other-B/C Ranking:40
Other-Project in PSI or District SHSP Listing:25
Other-High Number of Targeted Crashes:10
Other-Cost Estimate and Project Schedule:10
Other-Other:15
Total Relative Weight:100

Program: HSIP (no subprograms)

Date of Program Methodology:12/1/2019

What is the justification for this program?

- Addresses SHSP priority or emphasis area

What is the funding approach for this program?

Competes with all projects

What data types were used in the program methodology?

Crashes

- All crashes
- Fatal and serious injury crashes only

Exposure

- Traffic
- Volume
- Lane miles

Roadway

- Median width
- Horizontal curvature
- Functional classification
- Roadside features

What project identification methodology was used for this program?

- Crash frequency
- Crash rate
- Excess expected crash frequency with the EB adjustment
- Other-Systemic initiative analysis

Are local roads (non-state owned and operated) included or addressed in this program?

Yes

Are local road projects identified using the same methodology as state roads?

No

Describe the methodology used to identify local road projects as part of this program.

Localities must conduct analysis using data-driven approach following the HSIP guidelines and submit an application to show project return-on-investment,

How are projects under this program advanced for implementation?

- Competitive application process

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

Relative Weight in Scoring

Other-Systemic Analysis:100
Total Relative Weight:100

Program: Local Safety

Date of Program Methodology:

What is the justification for this program?

What is the funding approach for this program?

What data types were used in the program methodology?

Crashes **Exposure** **Roadway**

What project identification methodology was used for this program?

Are local roads (non-state owned and operated) included or addressed in this program?

Are local road projects identified using the same methodology as state roads?

How are projects under this program advanced for implementation?

Select the processes used to prioritize projects for implementation. For the methods selected, indicate the relative importance of each process in project prioritization. Enter either the weights or numerical rankings. If weights are entered, the sum must equal 100. If ranks are entered, indicate ties by giving both processes the same rank and skip the next highest rank (as an example: 1, 2, 2, 4).

What percentage of HSIP funds address systemic improvements?

70

HSIP funds are used to address which of the following systemic improvements?

- Add/Upgrade/Modify/Remove Traffic Signal
- Clear Zone Improvements
- Horizontal curve signs
- Install/Improve Pavement Marking and/or Delineation
- Install/Improve Signing
- Other-Pedestrian Crossing Improvements
- Other-Two Lane Rural Road Improvements
- Other-Unsignalized Intersection Improvements
- Pavement/Shoulder Widening
- Rumble Strips
- Traffic Control Device Rehabilitation

In June 2019, the Commonwealth Transportation Board (CTB) adopted Safety Performance Targets for Calendar Year (CY) 2020 and found the anticipated safety outcomes associated with the Safety Performance Targets to be unacceptable. As a result, the CTB directed the Office of Intermodal Planning and Investment (OIPI), working collaboratively with VDOT and Department of Motor Vehicles (DMV), to analyze and develop a plan resulting in a net reduction in fatal and serious injury crashes. A key finding from this data-driven analysis demonstrated that systemic and hybrid[1] corridor safety projects had the potential to provide a greater crash reduction benefits for lower cost than traditional spot improvement projects.

Following this finding, VDOT developed a series of plans to deploy systemic countermeasures on both VDOT and local roadways and those plans were subsequently incorporated into CTB resolutions. The following are the countermeasures included in each of those plans.

The **“Phase I” VDOT Systemic Improvement Plan** countermeasures included the following:

1. High-Visibility Signal Backplates (HVSB)

2. Flashing Yellow Arrow (FYA)

3. Pedestrian Accommodations Improvements at Signalized Intersections

4. Centerline Rumble Strip

5. Edgeline Rumble Strip/Stripes

6. Curve Delineation

7. Improvements at Unsignalized Intersections

8. Pavement Shoulder Wedge *(funded by pavement maintenance)*

The **“Phase II” Systemic Improvement Plan** countermeasures included the following:

VDOT Systemic Measures:

1. Two-Lane Rural Roads (TLRR Roadway Departure),

2. Expanded Flashing Yellow (Intersections)

3. Expanded Pedestrian Crossings (Intersections)

Local Systemic Measures

1. Flashing Yellow Arrow (FYA) Signals

2. High-Visibility Signal Backplates (HVSB)

3. Pedestrian Crossings

4. Curve Signage

5. Unsignalized Intersections

6. Road Reconfiguration (Road Diets)

Localities may also submit applications for alternative systemic improvements. For alternative improvements, the applicant must then show an ROI that is comparable to those pre-selected improvements noted above. Lastly, alternative improvements may not be prioritized over the six listed initiatives.

[1] VDOT defines a hybrid project as a combination of spot and systemic items which can be systematically applied. One example of a hybrid project is integrating shoulder widening (spot) with rumble strips (systemic).

What process is used to identify potential countermeasures?

- Crash data analysis
- Data-driven safety analysis tools (HSM, CMF Clearinghouse, SafetyAnalyst, usRAP)
- Engineering Study
- Road Safety Assessment
- SHSP/Local road safety plan
- Stakeholder input

Does the State HSIP consider connected vehicles and ITS technologies?

Yes

Describe how the State HSIP considers connected vehicles and ITS technologies.

In Virginia's Strategic Highway Safety Plan (SHSP), VDOT considers Connected Vehicle/Autonomous Vehicles as a special area of focus. The SHSP provides a strategy in providing future technology regarding this specific topic: Ensure that future connected and autonomous vehicle technology deployments maximize potential safety benefits for all users by supporting necessary planning and research activities.

Intelligent Transportation Systems (ITS) technologies are part of HSIP projects as there can be cost-effective ITS projects that improve safety.

Examples of ITS technologies applicable for HSIP:

· Real-time Adaptive Signal Controllers,

· Advance Transportation Controllers

· Signal Optimization

· Dynamic Message Sign (DMS), Overhead Message Boards, and Closed-Circuit Television (CCTV)

· Fiber Optic Lines and Connection.

· Incident Management: Signs and Camera

· Real-time Performance Measuring Software: iPeMS (Iteris Performance Measurement System)

· Retrofit Pedestrian signal heads with pedestrian countdown signals, Accessible Pedestrian Signal (APS) and Accessible Pedestrian signal Detectors (APD)

· Controller Actuated Beacon / flasher (CAB)

· Pilot Pedestrian Project – “Dwell On Red” on overnight hours to reduce speed and improve pedestrian safety.

Does the State use the Highway Safety Manual to support HSIP efforts?

Yes

Please describe how the State uses the HSM to support HSIP efforts.

VDOT emphasizes data-driven decision-making to improve transportation safety and safety data. One way that VDOT has employed the use of the Highway Safety Manual (HSM) is through a statewide evaluation of systemic improvement projects. This evaluation involved a simple before-and-after evaluation of all eligible systemic projects funded through the HSIP program. Also, this effort involved preparations for future systemic evaluations, including collection of project-level data and modification of the HSIP project application forms.

To make data-driven decisions on the use of public funding for safety improvements, VDOT developed state-specific Safety Performance Functions (SPFs) and prioritized list of locations with the largest Potential for Safety Improvements (PSI). The use of SPFs and PSI for network screening and project prioritization are well documented throughout the HSM.

VDOT’s comprehensive set of state-specific SPFs cover 98 percent of its state-maintained roadway locations. The impetus for creating this unique dataset and analytical toolbox arose from the decision that AASHTOWare Safety ™ did not adequately meet the needs for VDOT roadways. VDOT developed state-specific SPFs using historical crash locations, traffic volumes, and roadway inventory layers. SPF developers worked collaboratively alongside engineers to evaluate whether each SPF was implementable for all types of improvements (spot, corridor, and systemic). To date, VDOT has developed SPFs covering all road segment, intersection and interchange area site types.

For the development of its PSI data, VDOT incorporates the comparisons of actual- to predicted-crash frequencies in its network screening. The top 100 intersections and top 100 miles of segments with the largest PSI annually are then published for use by VDOT staff, safety partners, or the public. This list is sent to the district engineers, who can then determine which site(s) to prioritize based on their practical experience and knowledge of the area. Benefits of VDOT’s data-driven approach, such as the creation of state-specific SPFs and PSIs, include:

· Streamlined prioritization of systemic countermeasure implementation locations at a District-level

· Use of public funding in a more cost-effective manner

· Measure quantifiable benefits for both systemic and spot improvements

· Program transparency and response to public comments or concerns

The SPF development team conducts training (including an annual “roadshow” to all nine districts) and hosts webinars to ensure district engineers understand the methodology and how to use the SPFs. VDOT has not mandated the use of SPFs and PSIs by the districts because the process of introducing a new methodology takes time. However, the district engineers are aware that it is the preferred methodology for network screening.

Describe other aspects of the HSIP methodology on which the State would like to elaborate.

VDOT Traffic Operation Division Staff within Central Office administers the HSIP and provides the VDOT District Offices with Targeted Safety Needs (TSN) intersections and segments based on the Highway Safety Manual (HSM) network screening methodology. TSN locations indicate intersections or segments that have a positive Potential for Safety Improvements (PSI) value in three or more years of the five-year period, indicating recurring safety issues. VDOT districts use this information with local knowledge to initiate further engineering studies of the locations and scope projects to be submitted for inclusion in its Six-Year Improvement Program (SYIP).

Depending on the scale and complexity of the projects, VDOT district offices conduct Roadway Safety Assessments (RSA) as determined by the VDOT District Traffic Engineer. To assist the District Traffic Engineer with conducting these RSAs, VDOT's Highway Safety Program developed Virginia specific guidelines for performing these assessments.

VDOT HSIP staff is responsible for establishing the process and conducting network screening, scoring, and selection of HSIP systemic improvement projects. HSIP projects are selected based upon the risk factors across an entire roadway network or all locations where investments of HSIP funds may yield highest rate of return in terms of reducing deaths and serious injuries.

Once the inventory or locations are determined, the VDOT Districts are responsible for further evaluation of the selected HSIP project locations for feasibility based on local knowledge and data-driven analysis. Once the final HSIP projects are prioritized and selected by Central Office, the selected HSIP projects are included in Virginia’s Six-Year Improvement Program (SYIP), which is then presented to the Commonwealth Transportation Board (CTB) for approval. Once the HSIP projects are approved, programmed, and have received allocated funds, the HSIP staff monitor the projects from scoping through construction to the final voucher. The project monitoring process consists of tracking changes that occur to the following functions: advertisement dates, funding authorization dates, engineer’s estimates, and expenditures. Cost, schedule, and scope are monitored and measured to ensure that the HSIP projects are being delivered on time and on budget. HSIP project schedules and cost both directly affect the Federal Strategy and VDOT’s ability to meet their Obligation Authority for the HSIP Program.

Project Implementation

Funds Programmed

Reporting period for HSIP funding.

State Fiscal Year

Enter the programmed and obligated funding for each applicable funding category.

FUNDING CATEGORY	PROGRAMMED	OBLIGATED	% OBLIGATED/PROGRAMMED
HSIP (23 U.S.C. 148)	$85,489,121	$71,423,334	83.55%
HRRR Special Rule (23 U.S.C. 148(g)(1))	$4,459,774	$1,197,475	26.85%
VRU Safety Special Rule (23 U.S.C. 148(g)(3))	$0	$0	0%
Penalty Funds (23 U.S.C. 154)	$12,915,598	$18,875,791	146.15%
Penalty Funds (23 U.S.C. 164)	$0	$0	0%
RHCP (for HSIP purposes) (23 U.S.C. 130(e)(2))	$4,959,785	$5,708,198	115.09%
Other Federal-aid Funds (i.e. STBG, NHPP)	$0	$0	0%
State and Local Funds	$35,179,093	$0	0%
Totals	$143,003,371	$97,204,798	67.97%

VDOT did not trigger the HRRR Special Rule in FY22 but did in FY23. VDOT met the obligation requirement for the year the Special Rule applies, but since this report covers two different Federal Fiscal Years, it explains why the obligation amount is less than the programmed amount.

Additionally, other situations may arise where VDOT may choose NOT to obtain federal authorization for a phase based on the specific project details and in consideration of multiple factors. As such, the obligation of state safety funds is not shown in this report.

How much funding is programmed to local (non-state owned and operated) or tribal safety projects?

$13,836,370

How much funding is obligated to local or tribal safety projects?

$23,796,895

How much funding is programmed to non-infrastructure safety projects?

$6,926,444

How much funding is obligated to non-infrastructure safety projects?

$2,064,866

Non-infrastructure projects may include a combination of: pre-scoping project development, RSA guide(s), general support for HSIP Program Implementation, data analysis, planning activities, consultant task, SHSP development and implementation.

How much funding was transferred in to the HSIP from other core program areas during the reporting period under 23 U.S.C. 126?

$0

How much funding was transferred out of the HSIP to other core program areas during the reporting period under 23 U.S.C. 126?

$0

Discuss impediments to obligating HSIP funds and plans to overcome this challenge in the future.

Having realistic and attainable project schedules may be an impediment to obligating HSIP funds. Some Districts and localities struggle with project development of HSIP funded safety projects, resulting in delay. Ultimately HSIP funds are not used for those projects in the planned years. To overcome these project delivery issues, the HSIP staff are working with the District Traffic Engineers to track the milestones of HSIP projects and assistance is also available to localities to better prepare and administer HSIP projects. This will help District and local agency project managers stay on schedule and deliver the safety improvement projects on time.

Also, to better prepare to program and allocate the funds we added Validation questions in Smart-Portal. Both local Liaison and District Traffic Engineers should thoroughly review and validate the locality projects before they are forwarded to the Central Office. The addition of validation questions is a great way to ensure that projects align with the VDOT goals and criteria before they move forward. The involvement of both Local Liaison and District Traffic Engineers in the validation process helps ensure a thorough assessment of the Locality projects. Here are the questions added:

· "Is the project consistent with the Locality Comprehensive Transportation Plan?"

· "Does the Locality have any current performance deficiencies regarding developing or delivering projects in the SYIP?"

· "Is the project a viable locally administered project candidate?"

Inflation of project materials and labor costs are also becoming a big issue in project delivery along with contractor capacity. VDOT is actively monitoring both of these factors and have included a standardized annual inflation factor to all projects.

VDOT will continue to work through its District offices to provide guidance and support to District and local agency staff in the project development phase of these safety projects.

Describe any other aspects of the State's progress in implementing HSIP projects on which the State would like to elaborate.

In September 2019, the CTB approved an amendment to FY 2020-2025 Six-Year Improvement Program (SYIP) to begin deployment of systemic safety improvements included in an initial Systemic Improvement Plan with the eight systemic countermeasures initiatives.

Of the eight systemic safety initiatives, VDOT completed the High Visibility Signal Backplates (HVSB) and Flashing Yellow Arrow (FYA) initiatives first. Below is the progress of the eight systemic countermeasure initiatives from Phase One as of July 2023:

· High-Visibility Signal Backplates (HVSB): 100% Complete – 3040 Locations

· Flashing Yellow Arrow (FYA): 100% Complete – 1140 Locations

· Pedestrian Accommodations Improvements at Signalized Intersections: 33.9% Complete – 166 Locations

· Centerline Rumble Strip: 40.6% Complete – 660 Miles

· Edgeline Rumble Strip/Stripes: 21.1% Complete – 614 Miles

· Curve Delineation: 34.6% Complete – 536 Locations

· Improvements at Unsignalized Intersections: 35.6% Complete – 535 Locations

· Safety Edge: 1.1% Complete – 346 Miles

Detailed Implementation Criteria for each initiative found here:
https://www.virginiadot.org/business/resources/vhsip/VDOT-2nd-Phase-VHSIP-Systemic-Safety-Initiative-Implementation-Criteria-Locality_acc050222.pdf

In January 2022, the Commonwealth Transportation Board (CTB) approved the Virginia Highway Safety Investment Strategy that continued deployment of proven systemic and hybrid safety countermeasures across the Commonwealth. The next systemic safety initiatives for VDOT-maintained roads include the following:

· Expanded Flashing Yellow Arrow

· Pedestrian Crossings

· Two-Lane Rural Roads

The systemic safety initiatives for locally maintained streets and roads include the following:

· Flashing Yellow Arrow (FYA)

· High-Visibility Signal Backplates (HVSB)

· Pedestrian Crossings

· Curve Signage

· Unsignalized Intersections

· Road Reconfiguration (Road Diet)

SMART Portal will open for localities to submit safety applications for HSIP funding consideration, and SMART Portal Intake Period beginning August 1st through October 31st, 2023. The funding will be awarded through a competitive application process with application that have a higher return on investment and other factors.

VDOT also developed the Virginia-specific comprehensive crash costs for use in highway safety project evaluation. This crash costs should be used by practitioners in Virginia when calculating the benefit-cost ratio for specific safety treatments. The detail information's is provided in the following link: https://www.virginiadot.org/business/resources/vhsip/VDOT-Crash-Costs-Memo_acc050222.pdf

General Listing of Projects

List the projects obligated using HSIP funds for the reporting period.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
FedID: 5167003 - Project Description: - 1852 - #SMART18 - RTE 602 - RECONSTRUCTION	Intersection geometry	Modify lane assignment	0.595	Miles	$1744778	$5817301	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	700	45	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0327039 - Project Description: - 96938 - #HB2.FY17 Route 53/618 Roundabout	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$3626141	$3751141	Penalty Funds (23 U.S.C. 154)	Rural	Major Collector	12,700	45	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27397 - Project Description: - 106197 - RTE 637 - CONSTRUCT ROUNDABOUT	Intersection traffic control	Modify control – Modern Roundabout	1	Intersections	$4230370	$4230370	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	24,700	45	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27711 - Project Description: - 107036 - INSTALL PEDESTRIAN SIGNALS - DISTRICTWIDE	Pedestrians and bicyclists	Pedestrian signal	0	Various Location	$1221094	$1221094	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
FedID: 5128373 - Project Description: - 107055 - Route 11 & 117 Roanoke Co. - Pedestrian Safety Improvements	Pedestrians and bicyclists	Install new crosswalk	0.45	Miles	$1394369	$1394369	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	10,000	35	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5128427 - Project Description: - 107061 - #HB2.FY17 Rte 419 Safety Improvements at Tanglewood	Intersection traffic control	Modify traffic signal – modernization/replacement	0.57	Miles	$2645526	$7097396	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	37,000	35	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5118318 - Project Description: - 107063 - Rt. 221 Bedford Co. - Pedestrian Safety Improvements	Pedestrians and bicyclists	Install sidewalk	0.656	Miles	$2578353	$2578353	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5111327 - Project Description: - 107096 - INSTALL CENTERLINE RUMBLE STRIPS - PRIMARY - DISTRICTWIDE	Roadway	Rumble strips – center	0	Various Location	$1229783	$1229783	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5111296 - Project Description: - 107097 - INSTALL FLASHING YELLOW ARROWS -	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$2633374	$2633374	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
DISTRICTWIDE ON-CALL															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0038146 - Project Description: - 108068 - Jackson River Scenic Trail - Phase 4	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.5	Miles	$631764	$632310	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	0	0	City or Municipal Highway Agency	Spot	Bicyclists	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A03908 - Project Description: - 108792 - Virginia Beach Systemic FYA	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	1	Miles	$600500	$828875	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27736 - Project Description: - 108885 - #SMART18 - HOPKINS ROAD SIDEWALK (BONNIEBANK RD TO S MELODY)	Pedestrians and bicyclists	Install sidewalk	0.52	Miles	$966200	$1167646	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0554035 - Project Description: - 108886 - CURVE REALIGNMENT - RTE 675 - LUNENBURG COUNTY	Alignment	Horizontal curve realignment	0.104	Curves	$1546000	$1546000	HSIP (23 U.S.C. 148)	Rural	Local Road or Street	570	35	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															injuries or fatalities.
FedID: 5A27622 - Project Description: - 108887 - #SMART18 - HARROWGATE ROAD/COUGAR TRAIL - PEDESTRIAN IMPROVE	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.265	Miles	$889000	$2525792	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5128396 - Project Description: - 108896 - #HB2.FY17 Colonial Avenue Improvements	Pedestrians and bicyclists	Install sidewalk	0.5	Miles	$2411884	$6833700	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0		City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0828070 - Project Description: - 109062 - TRENCH WIDEN SHOULDERS AND INSTALL RUMBLE STRIPS RTE 259	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	12.25	Miles	$4165000	$4165000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5111401 - Project Description: - 109516 - ROUTE 711 - CROSSOVER MOVEMENT CONVERSION	Access management	Median crossover - relocate/close crossover	0.243	Miles	$2292875	$2292875	HSIP (23 U.S.C. 148)	Urban	Major Collector	22,000	35	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
FedID: 5128410 - Project Description: - 109570 - Orange Avenue/ Hollins Road Signal Upgrade - City of Roanoke	Intersection traffic control	Modify traffic signal – modernization/replacement	1	Intersections	$446477	$446477	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	37,700	45	County Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5204122 - Project Description: - 109573 - ROUTE 522 ROAD DIET AND BIKE PEDESTRIAN IMPROVEMENTS	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.77	Miles	$3029921	$3046235	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	26,000	45	City or Municipal Highway Agency	Spot	Bicyclists	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS09291 - Project Description: - 109591 - PROVIDE SD ESMNT/SIGNAL AT WILLIAMSON BLVD STONEHOUSE DR	Intersection traffic control	Modify control – new traffic signal	1	Intersections	$683818	$683818	HSIP (23 U.S.C. 148)	Urban	Major Collector	28,900	35	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9644142 - Project Description: - 109628 - SYSTEMIC ROADWAY DEPARTURE TREATMENTS - RTE 460 CORRIDOR	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	21.03	Miles	$601532	$601532	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A03971 - Project Description: - 109687 - Hampton Flashing Yellow Arrow Improvements	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$390649	$390649	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human

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															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0218018 - Project Description: - 110827 - RTE 7 SHOULDER WIDENING & RUMBLE STRIPS	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	4.17	Miles	$2855000	$2855000	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0818056 - Project Description: - 110828 - RTE 11 SHOULDER WIDENING & RUMBLE STRIPS	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	3.04	Miles	$732967	$732967	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27760 - Project Description: - 110841 - SYSTEMIC PEDESTAL TO MAST ARM SIGNAL IMPROVEMENTS - URBAN	Intersection traffic control	Modify traffic signal – modernization/replacement	0	Various Location	$2291067	$2291067	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	County Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27904 - Project Description: - 110844 - PHASE 2 - PEDESTRIAN SAFETY IMPROVEMENTS - CITYWIDE	Pedestrians and bicyclists	Install new crosswalk	0	Various Location	$2417633	$2417633	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	County Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

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															injuries or fatalities.
FedID: 9666112 - Project Description: - 110864 - SHOULDER RUMBLE STRIPS - DISTRICT WIDE	Roadway	Rumble strips – edge or shoulder	0	Various Location	$486607	$486607	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27672 - Project Description: - 110880 - PEDESTRIAN SAFETY IMPROVEMENTS WITH HAWKS AND RRFBS	Pedestrians and bicyclists	Rapid Rectangular Flashing Beacons (RRFB)	0	Various Location	$1050665	$1321686	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	County Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A04098 - Project Description: - 111023 - Install and upgrade Countdown Pedestrian Signals	Pedestrians and bicyclists	Pedestrian signal	0	Various Location	$2123933	$2123933	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27713 - Project Description: - 111106 - RTE 250 SIDEWALK - DOMINION BLVD TO SPRINGFIELD RD	Pedestrians and bicyclists	Install sidewalk	1.364	Miles	$2456545	$2456545	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
FedID: 5115232 - Project Description: - 111426 - RIVERWALK SHARED USE PATH PROJECT (PHASE I)	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.19	Miles	$237111	$237111	HSIP (23 U.S.C. 148)	Urban	Local Road or Street	3,900	55	State Highway Agency	Spot	Bicyclists	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27746 - Project Description: - 111467 - #SMART18 - SB Rt 288 to WB US 360 WB Off-Ramp	Interchange design	Acceleration / deceleration / merge lane	1.089	Miles	$7298971	$25120240	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	0	25	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5B01298 - Project Description: - 111728 - US Rte. 15/29 & Rte. 215 Intersection & Signal Improvements	Intersection geometry	Innovative Intersection (e.g. MUT, RCUT, QR)	0.2	Miles	$478486	$3646863	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	103,000	55	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0027049 - Project Description: - 111730 - #SMART18 - ROUTE 151/US 250 INTERSECTION IMPROVEMENTS	Intersection traffic control	Modify control – Modern Roundabout	0.04	Miles	$3919002	$5878829	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	25,700	55	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5154113 - Project Description: - 113352 - Roanoke Street Sidewalk at 460 By-Pass	Pedestrians and bicyclists	Install sidewalk	0.28	Miles	$884483	$1443616	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human

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															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A04064 - Project Description: - 113748 - Systemic Flashing Yellow Arrow Improvements Phase 2	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$704580	$704580	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5329013 - Project Description: - 113767 - NORTON ROAD - CONSTRUCT NEW SIDEWALK-PHASE 2 AND PHASE 3	Pedestrians and bicyclists	Install sidewalk	0.28	Miles	$895093	$895093	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5102202 - Project Description: - 113768 - RTE.11 SIDEWALK EAST SIDE OF EAST MAIN ST. ABINGDON	Pedestrians and bicyclists	Install sidewalk	0.07	Miles	$241928	$241928	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27929 - Project Description: - 113812 - Traffic Control Signals	Intersection traffic control	Modify control – new traffic signal	0	Various Location	$1903920	$2111818	HSIP (23 U.S.C. 148)	Urban	Major Collector	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

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															injuries or fatalities.
FedID: 5A04238 - Project Description: - 113821 - Potters Road Road Diet	Roadway	Roadway narrowing (road diet, roadway reconfiguration)	0.98	Miles	$570000	$1282774	HSIP (23 U.S.C. 148)	Urban	Major Collector	0	35	City or Municipal Highway Agency	Spot	Bicyclists	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5104316 - Project Description: - 113861 - WASHINGTON PARK/MADISON AVENUE BICYCLE CONNECTOR TRAIL	Pedestrians and bicyclists	Pedestrians and bicyclists – other	0.1	Miles	$473839	$493250	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Spot	Bicyclists	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0971114 - Project Description: - 113891 - Alt. 58 Median Rumble Strips - Wise County	Roadway	Rumble strips – edge or shoulder	3.813	Miles	$22155	$22155	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	14,800	55	State Highway Agency	Spot	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5115258 - Project Description: - 113894 - Main Street Pedestrian Safety Improvement - Bridgewater	Pedestrians and bicyclists	Pedestrian signal	1.6	Miles	$181033	$240639	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	16,000	30	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5176009 - Project Description: -	Pedestrians and bicyclists	Install sidewalk	0.3	Miles	$518242	$518242	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal	Spot	Pedestrians	Implement road

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113896 - Gen-Oak Connector - Bridgewater												Highway Agency			improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5118288 - Project Description: - 113933 - DISTRICTWIDE ON-CALL RUMBLE STRIP INSTALLATION	Roadway	Rumble strips – edge or shoulder	0	Various Location	$988386	$988386	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5329012 - Project Description: - 113983 - NORTON ROAD - CONSTRUCT NEW SIDEWALK-PHASE 4	Pedestrians and bicyclists	Install sidewalk	0.2	Miles	$583519	$583519	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5118317 - Project Description: - 114062 - HSIP16 - BUS 501 - CONSTRUCT SIDEWALK (KEMPER STREET)	Pedestrians and bicyclists	Install sidewalk	0.255	Miles	$556062	$651773	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	City or Municipal Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0623149 - Project Description: - 114095 - RTE 29 - SHOULDER WIDENING, RUMBLE STRIPS, GR (NELSON)	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	5.38	Miles	$3847598	$3847598	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities

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															do not result in serious injuries or fatalities.
FedID: 0413074 - Project Description: - 114096 - HSIP21 - ROUTE 360 - SHOULDER WIDENING, RUMBLE STRIPS, & GR	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	2.79	Miles	$2002370	$2002370	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A27886 - Project Description: - 114200 - INSTALL SIDEWALK - DEER RUN ROAD - CHESTERFIELD	Pedestrians and bicyclists	Install sidewalk	0.212	Miles	$905142	$1305142	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Spot	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS04264 - Project Description: - 114738 - INSTALL REFLECTIVE BACK PLATES - DISTRICTWIDE	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Various Location	$99281	$99281	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS04274 - Project Description: - 115723 - INSTALLATION OF FLASHING YELLOW ARROWS - DW (CN-ONLY)	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$600000	$600000	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

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FedID: 9644145 - Project Description: - 115887 - SYSTEMIC CURVE DELINEATION - DISTRICTWIDE	Roadway delineation	Roadway delineation - other	0	Various Location	$2371136	$2371136	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9611120 - Project Description: - 115915 - ENHANCED CURVE SIGNING & MARKING - BRISTOL DISTRICTWIDE	Roadway delineation	Roadway delineation - other	0	Various Location	$2610152	$2610152	HSIP (23 U.S.C. 148)	Rural	Major Collector	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS05292 - Project Description: - 115940 - HSIP HR Edge Line Rumbles Primaries	Roadway	Rumble strips – edge or shoulder	0	Various Location	$236153	$236153	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5115203 - Project Description: - 116016 - District-wide Edgeline Rumble Strips Installations	Roadway	Rumble strips – edge or shoulder	0	Various Location	$2404711	$2404711	HSIP (23 U.S.C. 148)	Rural	Major Collector	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9644142 - Project Description: - 116323 - SYSTEMIC ROADWAY DEPARTURE	Roadway	Pavement surface – high friction surface	0	Various Location	$205977	$205977	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human

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TREATMENTS - DISTRICTWIDE															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS05292 - Project Description: - 116557 - SYSTEMIC UNSIGNALIZED INTERSECTION TREATMENTS - DISTRICTWIDE	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$190000	$190000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9666113 - Project Description: - 116592 - DISTRICT-WIDE SYSTEMIC UNSIGNALIZED INTER Northern NECK	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$187780	$187780	Penalty Funds (23 U.S.C. 154)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS09291 - Project Description: - 116606 - NOVA SYSTEMIC HIGH VISIBILITY BACKPLATES PH1B	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Various Location	$957601	$957601	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5A01733 - Project Description: - 116607 - NOVA SYSTEMIC FLASHING YELLOW ARROWS PH1	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$1226648	$1226648	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

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															injuries or fatalities.
FedID: TS09300 - Project Description: - 116630 - NOVA SYSTEMIC FLASHING YELLOW ARROWS PH3	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$2939939	$2939939	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9688115 - Project Description: - 116686 - STAUNTON DISTRICT UNSIGNALIZED INTERSECTION IMPROVEMENTS	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$1583077	$1583077	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS04274 - Project Description: - 116691 - SYSTEMIC FLASHING YELLOW ARROWS - DISTRICTWIDE	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$1806422	$1806422	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS09300 - Project Description: - 116721 - NOVA SYSTEMIC PEDESTRIAN CROSSINGS PH1	Pedestrians and bicyclists	Install new crosswalk	0	Various Location	$3550001	$3550001	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

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FedID: 96A9163 - Project Description: - 116722 - NOVA SYSTEMIC PEDESTRIAN CROSSINGS PH2	Pedestrians and bicyclists	Install new crosswalk	0	Various Location	$3550000	$3550000	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS02264 - Project Description: - 117215 - FY 21 Edgeline Rumblestrips	Roadway	Rumble strips – edge or shoulder	0	Various Location	$791322	$791322	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5128448 - Project Description: - 117221 - Franklin Road Sidewalk Improvements - Rt. 220 B- Phase 2	Pedestrians and bicyclists	Install sidewalk	0	Various Location	$1791406	$1832024	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Pedestrians	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS05311 - Project Description: - 117349 - HSIP Hampton Roads Unsignalized Intersections	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$96156	$96156	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9688083 - Project Description: - 117454 - STAUNTON DISTRICT HVBP TASK 31	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	0	Various Location	$60000	$60000	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human

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															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9666116 - Project Description: - 117572 - DISTRICTWIDE - TRENCH WIDENING (TOP 100 SEGMENTS)	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	100	Miles	$1361618	$1361618	HSIP (23 U.S.C. 148)	Urban	Major Collector	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9633064 - Project Description: - 119588 - HSIP20 - DISTRICTWIDE - UNSIGNALIZED INTERSECTIONS	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$1142595	$1142595	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other Freeways & Expressways	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0812332 - Project Description: - 119668 - FY 22 Edgeline Rumblestrips	Roadway	Rumble strips – edge or shoulder	0	Various Location	$130805	$130805	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 5128460 - Project Description: - 119671 - FY 22 Centerline Rumble Strips	Roadway	Rumble strips – center	0	Various Location	$41733	$41733	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															injuries or fatalities.
FedID: 9666121 - Project Description: - 119675 - ROADWAY DEPARTURE - CURVE COUNTERMEASURES - ROUTE 218	Roadway delineation	Roadway delineation - other	17.264	Miles	$764478	$764478	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS06252 - Project Description: - 120213 - BACK PLATES - MARION STREET / ROUTE 212 INTERSECTION	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	0	Various Location	$22625	$22625	HSIP (23 U.S.C. 148)	Urban	Major Collector	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9644152 - Project Description: - 120285 - ROADWAY DEPARTURE ON-CALL CONTRACT - DISTRICTWIDE	Roadway	Rumble strips – edge or shoulder	0	Various Location	$776452	$776452	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9677103 - Project Description: - 120678 - District-wide Unsignalized Intersections Improvements	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$661853	$661853	Penalty Funds (23 U.S.C. 154)	Rural	Major Collector	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
FedID: 5128479 - Project Description: - 120899 - FY 23 Curve Delineation	Roadway delineation	Roadway delineation - other	0	Various Location	$4679129	$4679129	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: TS06252 - Project Description: - 120977 - RTE 3 AND RTE 621 INTERSECTION MODIFICATION - HRRR	Access management	Median crossover - relocate/close crossover	1	Intersections	$228182	$228182	Penalty Funds (23 U.S.C. 154)	Urban	Principal Arterial-Other	79,200	55	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9633071 - Project Description: - 121823 - HSIP DISTRICTWIDE CURVE WARNING CONTRACT	Roadway delineation	Roadway delineation - other	0	Various Location	$309528	$309528	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9633069 - Project Description: - 122163 - VHSIP DISTRICTWIDE EDGE LINE RUMBLE STRIP INSTALL TASK #2B	Roadway	Rumble strips – edge or shoulder	0	Various Location	$184640	$184640	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other Freeways & Expressways	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 0027064 - Project Description: - 122394 - ROUTE 250 - RUNAWAY TRUCK RAMP	Intersection traffic control	Modify control – Modern Roundabout	0.169	Miles	$5463455	$5463455	HSIP (23 U.S.C. 148)	Rural	Minor Arterial	8,800	55	State Highway Agency	Spot	Intersections	Implement road improvements that ensure human

PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9622111 - Project Description: - 122425 - FY23 UNSIGNALIZED INTERSECTION - FLASHER INSTALLATION	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$300000	$300000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	City or Municipal Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9644192 - Project Description: - 122813 - SIGNAL TIMING OPTIMIZATION - DISTRICTWIDE	Intersection traffic control	Modify traffic signal timing – signal coordination	0	Various Location	$649000	$649000	HSIP (23 U.S.C. 148)	Urban	Principal Arterial-Other	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9666113 - Project Description: - 122934 - DISTRICT-WIDE SYSTEMIC UNSIGNALIZED INTERSECTIONS	Intersection traffic control	Systemic improvements – stop-controlled	0	Various Location	$650000	$650000	HSIP (23 U.S.C. 148)	Urban	Minor Arterial	0	0	State Highway Agency	Systemic	Intersections	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.
FedID: 9677111 - Project Description: - 123015 - DISTRICTWIDE SAFETY IMPROVEMENTS	Roadway	Pavement surface – high friction surface	0.4	Miles	$597371	$597371	HRRR Special Rule (23 U.S.C. 148(g)(1))	Rural	Major Collector	0	0	State Highway Agency	Systemic	Roadway Departure	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious

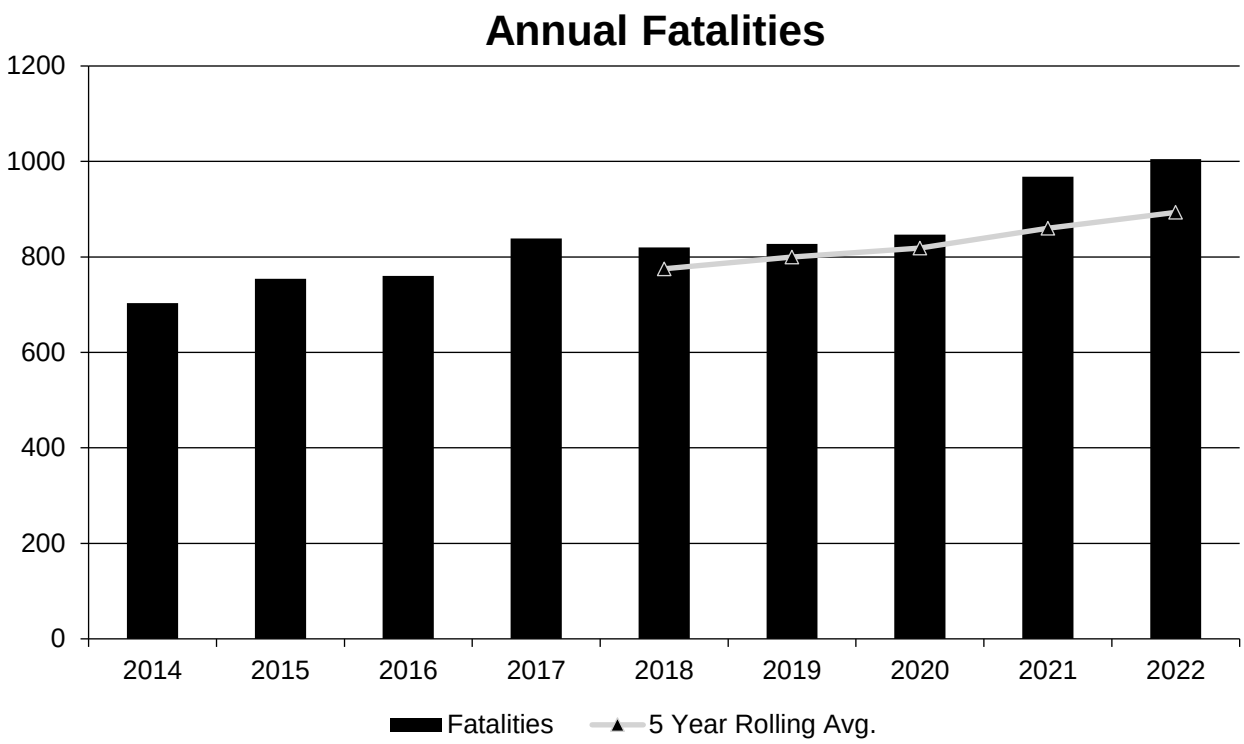
PROJECT NAME	IMPROVEMENT CATEGORY	SUBCATEGORY	OUTPUTS	OUTPUT TYPE	HSIP PROJECT COST($)	TOTAL PROJECT COST($)	FUNDING CATEGORY	LAND USE/AREA TYPE	FUNCTIONAL CLASSIFICATION	AADT	SPEED	OWNERSHIP	METHOD FOR SITE SELECTION	SHSP EMPHASIS AREA	SHSP STRATEGY
															injuries or fatalities.
FedID: 000S424 - Project Description: - 123314 - Incident Detour Plans - Statewide (Richmond & Culpeper)	Miscellaneous	Miscellaneous - other	0	Various Location	$146561	$146561	HSIP (23 U.S.C. 148)	Rural	Principal Arterial-Interstate	0	0	State Highway Agency	Systemic	Data	Implement road improvements that ensure human mistakes and vulnerabilities do not result in serious injuries or fatalities.

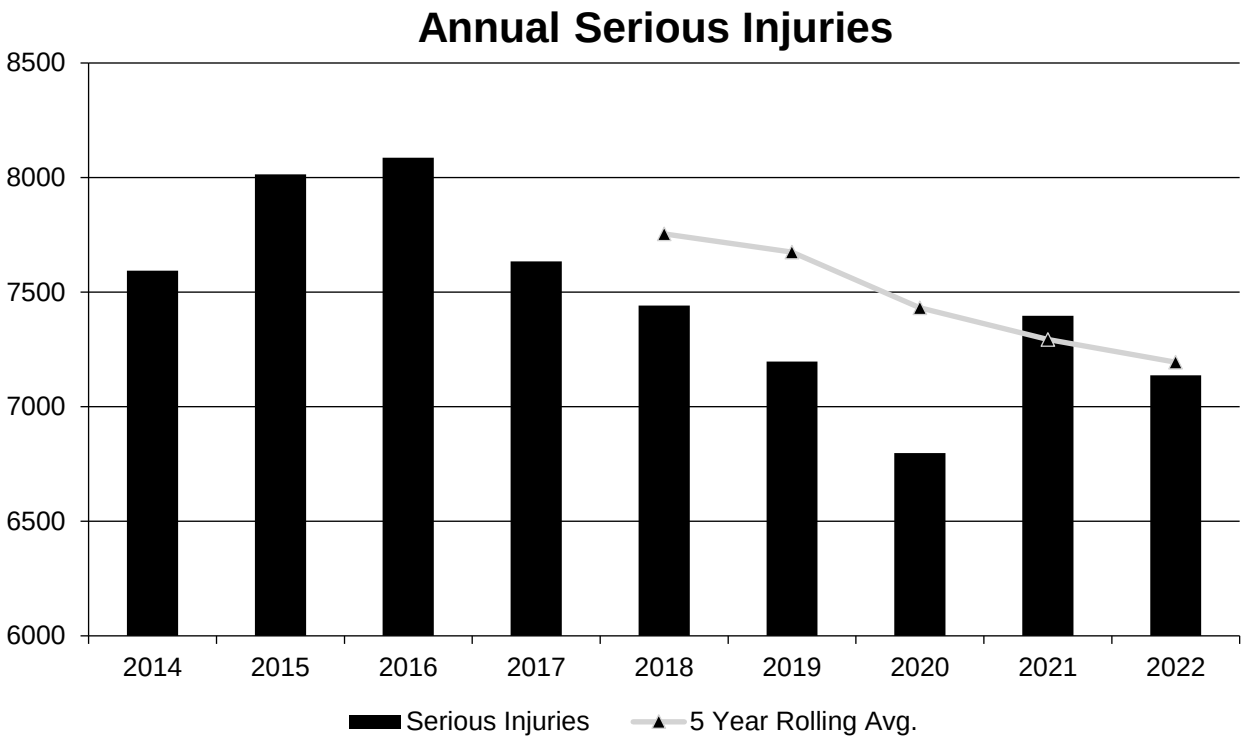
Safety Performance

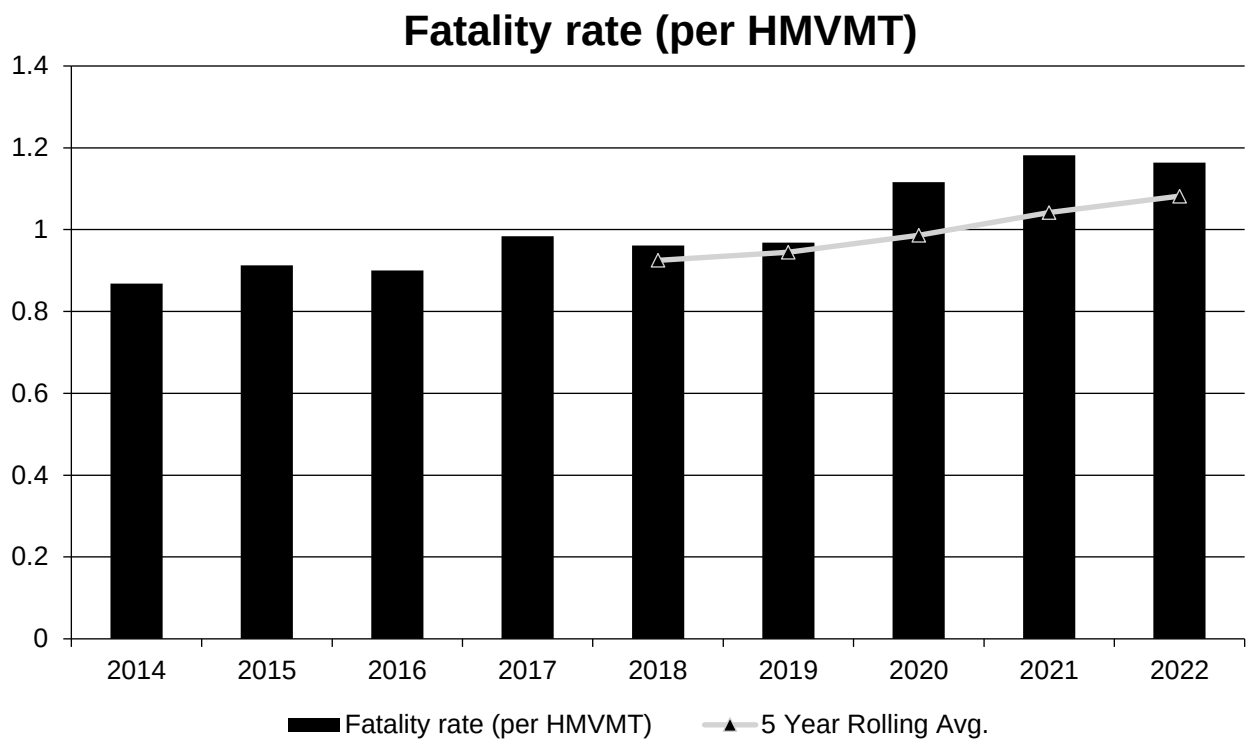
General Highway Safety Trends

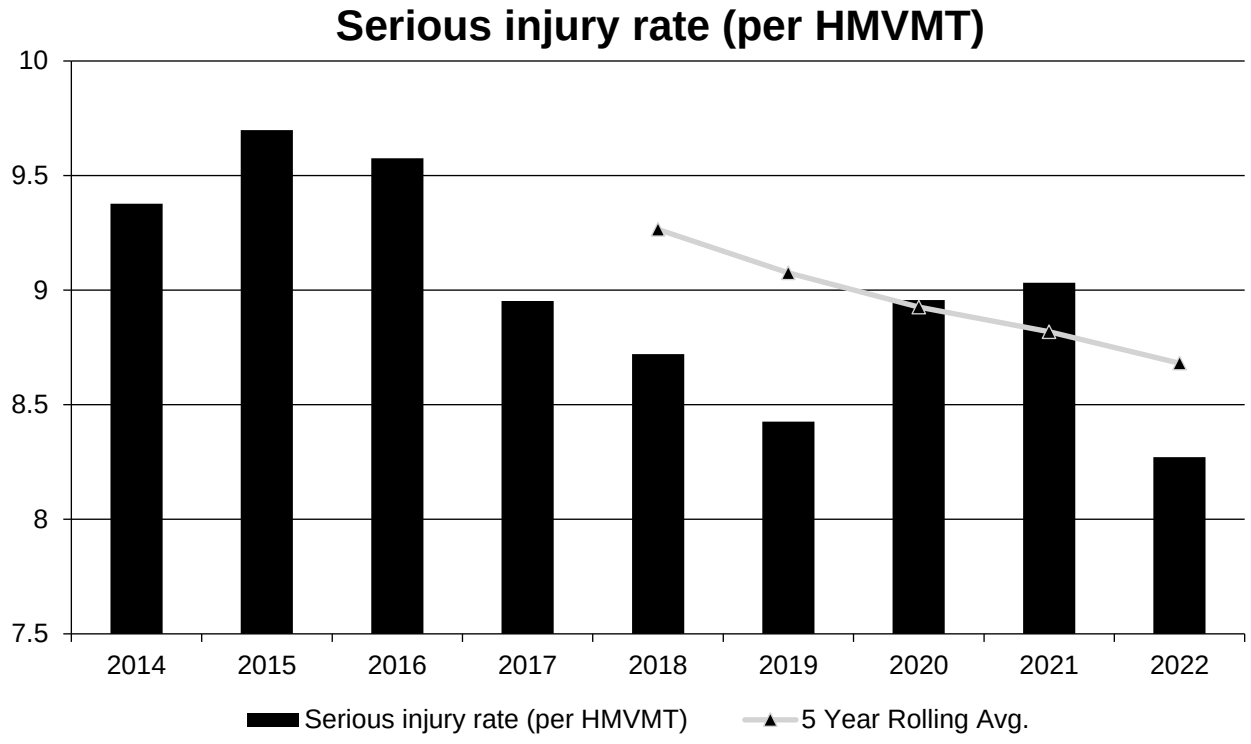
Present data showing the general highway safety trends in the State for the past five years.

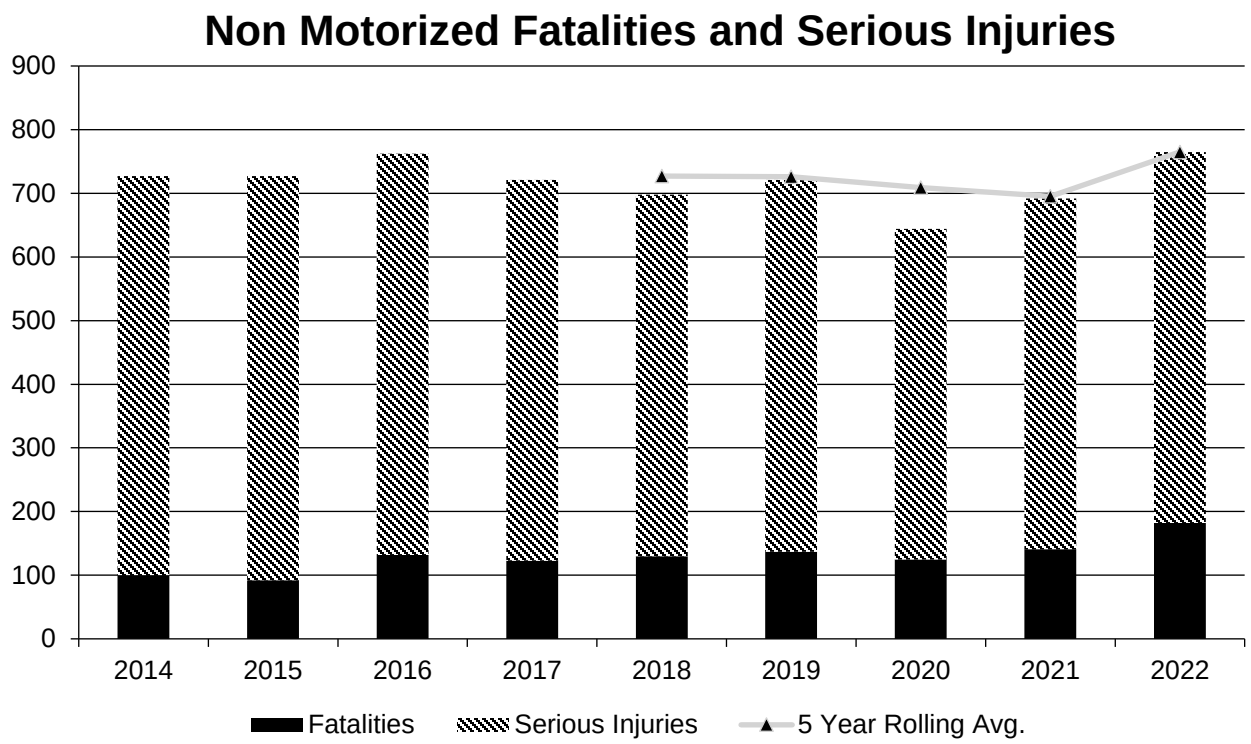
PERFORMANCE MEASURES	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fatalities	703	754	760	839	820	827	847	968	1,005
Serious Injuries	7,594	8,014	8,087	7,634	7,442	7,197	6,798	7,397	7,137
Fatality rate (per HMVMT)	0.868	0.913	0.900	0.984	0.961	0.968	1.116	1.182	1.164
Serious injury rate (per HMVMT)	9.377	9.699	9.575	8.953	8.721	8.426	8.957	9.032	8.271
Number non-motorized fatalities	100	92	132	123	130	137	125	141	182
Number of non-motorized serious injuries	627	635	630	598	568	584	519	551	583


Annual Fatalities
1200
1000
800
600
400
200
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatalities
5 Year Rolling Avg.


Annual Serious Injuries
8500
8000
7500
7000
6500
6000
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious Injuries
5 Year Rolling Avg.


Fatality rate (per HMVMT)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2014
2015
2016
2017
2018
2019
2020
2021
2022
Fatality rate (per HMVMT)
5 Year Rolling Avg.


Serious injury rate (per HMVMT)
10
9.5
9
8.5
8
7.5
2014
2015
2016
2017
2018
2019
2020
2021
2022
Serious injury rate (per HMVMT)
5 Year Rolling Avg.



Describe fatality data source.

FARS

FARS for pre-2022; VDOT for 2022

To the maximum extent possible, present this data by functional classification and ownership.

Year 2022

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Principal Arterial (RPA) - Interstate	55.2	350.4	0.62	3.94
Rural Principal Arterial (RPA) - Other Freeways and Expressways	0.6	4.4	0.89	0.65
Rural Principal Arterial (RPA) - Other	92.6	548.66	1.36	8.04
Rural Minor Arterial	111.6	617.4	2.1	11.62
Rural Minor Collector	17.6	146.2	1.75	14.56

Functional Classification	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Rural Major Collector	120	782.8	3.18	20.76
Rural Local Road or Street	57	415.6	2.14	15.87
Urban Principal Arterial (UPA) - Interstate	75	690.6	0.46	4.14
Urban Principal Arterial (UPA) - Other Freeways and Expressways	17.8	142.4	0.37	2.99
Urban Principal Arterial (UPA) - Other	122.2	1,033.6	1.09	9.26
Urban Minor Arterial	92.2	946.6	1.03	10.51
Urban Minor Collector	32.6	364.8	0.9	10.14
Urban Major Collector	12.6	109.6	0.28	2.44
Urban Local Road or Street	20.2	242	0.45	5.24

Year 2022

Roadways	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
State Highway Agency	702	4,955.4	1.22	8.83
County Highway Agency	10.2	88.4	17.07	6.1
Town or Township Highway Agency	4.6	51	0.52	4.16
City or Municipal Highway Agency	137.8	1,579	0.86	12.88
State Park, Forest, or Reservation Agency	1	2	6.32	0.6
Local Park, Forest or Reservation Agency	0	0.6	10.95	16.43
Other State Agency	0	0	0	0
Other Local Agency	0	0	0	0
Private (Other than Railroad)	0.2	1	0.14	0.64
Railroad	0	0	0	0
State Toll Authority	0	1.4	0	1.88
Local Toll Authority	1.2	4	0.84	3.55
Other Public Instrumentality (e.g. Airport, School, University)	0	0	0	0
Indian Tribe Nation	0	0	0	0

Safety Performance Targets

Safety Performance Targets

Calendar Year 2024 Targets *

Number of Fatalities:966.6

Describe the basis for established target, including how it supports SHSP goals.

Five Year Rolling Average above is based on predicted annual value of 1,005 fatalities in 2023 and 1,005 fatalities in 2024. Note that 2022 rates are based on predicted VMT values as estimate data for HPMS was not

available when the targets were set. These constant annual values are predicted leveling after and increase since 2015. Five-year average targets represent an increase that began in 2014 and is anticipated into 2024. Additional information on the prediction method used and collaboration with the Virginia Governor's Highway Safety Office (GHSO) is described in Question 35. Although the upward trend continued, Virginia's 2022-2026 SHSP safety performance objectives were set to match a 50 percent reduction by 2045 goal. This goal equates to about a two percent per year fatality reductions during the five-year period. These optimistic two percent reductions in fatalities until 2024 were adopted by the Commonwealth Transportation Board (CTB) as the state goal. Without intense intervention to improve travel technology and safety culture, reversing the recent trends will be difficult. Now that data-driven targets are being set and approved by CTB showing the predicted increases, the new SHSP actions and goals have even more support, with policy focus on safety, the reprioritization of HSIP on more cost effective systemic countermeasures, and new additional state funding of safety improvements starting last three years.

Number of Serious Injuries:7121.2

Describe the basis for established target, including how it supports SHSP goals.

Five Year Rolling Average above is based on predicted annual value of 7,137 Serious Injury (SI) in 2023 and 7,137 SI in 2024. Note that 2022 rates are based on predicted VMT values as estimate data for HPMS was not available when the targets were set. The annual values have generally been declining but have fluctuated in recent years, while the 5-year average targets represent a distinct leveling that began in 2021, that are anticipated to continue into 2024, after a long period of declines. Additional information on the prediction method used and collaboration with the Virginia GHSO is described in Question 35. Although the level trend continued, Virginia's 2022-2026 SHSP safety performance objectives were set to match a 50 percent reduction by 2045 goal. This goal equates to about a two percent per year SI reductions during the five-year period. These optimistic two percent reductions in SI were adopted by the Commonwealth Transportation Board (CTB) as the state goal. Without intense intervention to improve travel technology and safety culture, reversing the recent trends will be difficult. Now that data-driven targets are being set and approved by CTB showing the predicted slight increases, the new SHSP actions and goals have even more support, with policy focus on safety, the reprioritization of HSIP on more cost-effective systemic countermeasures, and new additional state funding of safety improvements starting last three years.

Fatality Rate:1.180

Describe the basis for established target, including how it supports SHSP goals.

Five Year Rolling Average above is based on predicted annual value of 1.204 fatalities per HMVMT in 2023 and 1.187 fatalities per HMVMT in 2024. Note that 2022 rates are based on predicted VMT values as estimate data for HPMS was not available when the targets were set. These annual and 5-year average targets represent an increase that began in 2015 and is anticipated into 2024, particularly with the uncertainty of VMT growth after the pandemic. Additional information on the prediction method used and collaboration with the GHSO is described in Question 35. Virginia's 2022-2026 SHSP safety performance objectives set optimistic objectives based on 50 percent fatality and serious injury reductions by 2045. Recently, however, fatalities have increased while pre-pandemic VMT growth was minimal; with an 11% reduction in 2020 followed by an increase of 8% in 2021 and 1% predicted in 2022, ultimately generating fluctuations in crash rates. Now that data-driven targets are being set for and approved by CTB, the SHSP actions and goals have even more support, given recent rate trends, with the reprioritization of HSIP on more cost effective systemic countermeasures and additional state funding of safety improvements starting last three years.

Serious Injury Rate:8.716

Describe the basis for established target, including how it supports SHSP goals.

Five Year Rolling Average above is based on predicted annual value of 8.548 fatalities per HMVMT in 2023 and 8.429 fatalities per HMVMT in 2024. Note that 2022 rates are based on predicted VMT values as estimate data for HPMS was not available when the targets were set. The annual values began increasing in 2020 and 2021 after a long period of declines but are predicted to decline slightly again to 2024. The 5-year average targets represent a leveling that began in 2018 and is anticipated into 2024, particularly with the uncertainty of VMT growth after the pandemic. Additional information on the prediction method used and collaboration with the GHSO is described in Question 35. Virginia's 2022-2026 SHSP safety performance objectives set optimistic objectives based on 50 percent fatality and serious injury reductions by 2045. Recently, however, SI have increased while pre-pandemic VMT growth was minimal; with an 11% reduction in 2020 followed by an increase of 8% in 2021 and 1% predicted in 2022, ultimately generating fluctuations in crash rates. Now that data-driven targets are being set for and approved by CTB, the SHSP actions and goals have even more support, given recent rate trends, with the reprioritization of HSIP on more cost-effective systemic countermeasures and additional state funding of safety improvements starting last three years.

Total Number of Non-Motorized Fatalities and Serious Injuries:717.8

Describe the basis for established target, including how it supports SHSP goals.

Five Year Rolling Average above is based on predicted annual value of 765 and then 765 non-motorized fatalities and serious injuries in 2023 and 2024, respectively. Note that 2022 rates are based on predicted VMT values as estimate data for HPMS was not available when the targets were set. The annual and 5-year averages were declining until the 2020 pandemic but have been increasing since then. Additional information on the prediction method used and collaboration with the GHSO are described in Question 35. Although there was a 50 percent increase in pedestrian fatalities in 2016 which has remained at that level, serious injuries from all non-motorized crashes were declining until an increase in 2021. A similar proportional increase in pedestrian fatalities occurred in 2022, also increasing the total measure. To support SHSP fatality and SI goals, reducing our non-motorized deaths will provide an important part of the mission. Indicating a leveling of non-motorized severe outcomes and targets has led to support of SHSP non-motorized safety actions identified for additional funding of infrastructure improvements and education initiatives within VDOT and across our safety partner organizations.

Describe efforts to coordinate with other stakeholders (e.g. MPOs, SHSO) to establish safety performance targets.

During the 2019 safety target setting coordination with Virginia’s GHSO (at DMV) and then new Commonwealth Transportation Board (CTB) approval process, the Board requested that VDOT investigate a more robust and data-driven methodology than using previous measure data trend lines or optimistic targets based on the SHSP.

VDOT HSIP staff investigated best practices (e.g., NCHRP 17-67) and prepared a work plan to develop a log-linear regression model to obtain baseline count predictions of future year measures and then adjust the baseline by assessing the expected benefits (crash modifications) of transportation projects to be completed the year prior. The new method was tested for setting 2019 targets, as a comparison, but first utilized for the 2020 safety targets. The rate measures would then be determined based on VMT forecasts used in the prediction model. Multiple social, economic, population, infrastructure and behavioral program spending and Vehicle-Miles Traveled (VMT) factors were tested each year for significance in predicting the count measures.

VDOT began coordination with the Virginia Department of Motor Vehicles (DMV) State Highway Safety Offices (SHSO) early in the process to obtain their vehicle and license data and input on predictions since the first 2020 target setting using this method. Several years of SHSO grant program spending was obtained to determine if crash modifications could be determined at the jurisdictional level for each program or in aggregate. Strong correlation between program spending and measure rates could not be produced, but a

downward trend in rates was observed with increased spending for several programs. A Transportation Research Board published paper (https://journals.sagepub.com/eprint/HY7SGYAVUKKNGAA6G4TD/full) explains the methodology first used for target setting. In the past four years there have been refinements of the inputs and the model validation methods.

The behavioral (GHSO total spending were tested and included in the fatality, serious injury and non-motorized regression models as significant factors for 2024 predictions. Several other VDOT spending categories for construction, maintenance, and operations were also tested and included in the models. As the baseline predictions were prepared, each SMART SCALE (capital improvement) and HSIP project to be completed in 2022 and early 2023 was assessed to determine the crash reduction benefits based on published Crash Modification Factors (CMFs). CMFs are refined based on the probability of effectiveness for those that include alcohol impairment and speeding based on the levels recorded. These project benefits were then subtracted from the baseline predictions to determine the final 2024 targets. The 2024 annual targets were then used, with the 2023 interim year targets using the same methods, to determine the 5-year average targets as entered in Question #34.

The baseline target models were developed using VDOT district and monthly aggregated data where available. This construct, combined with the consideration of programmed projects completed, includes the local and regional agency priorities for capital and behavioral program spending. The models could be used to test different spending scenarios. As such, the jurisdictional and regional mobility and safety initiatives are directly incorporated into the target setting methodology.

Since 2017, VDOT has held quarterly Metropolitan Planning Organization (MPO) coordination meetings for all FHWA (and optional FTA) performance measures and target setting. These meetings continue with MPO safety target setting resources provided each year after the statewide targets are set and reported. An Excel workbook with regional safety measures and VMT estimate data compiled by VDOT staff showing linear predictions is provided. This updated data and prediction tool has been provided since setting their 2018 MPO targets. A SharePoint site was developed and introduced for obtaining the workbook and submitting the targets. The workbook update required refining the Fatality Analysis Reporting System (FARS) geospatial data with Virginia fatality data to provide fatalities that occurred in Virginia for the multi-state MPOs. VDOT also provided a submittal letter template for MPOs to indicate if they will support the State or choose their own targets. All MPOs submittals have been received since the 2018 target setting. Three (of 15) of the larger MPOs have decided to set at least one independent targets from the State percent reductions. Updates and outreach for MPO 2024 target setting will occur in September 2023.

Does the State want to report additional optional targets?

No

Describe progress toward meeting the State's 2022 Safety Performance Targets (based on data available at the time of reporting). For each target, include a discussion of any reasons for differences in the actual outcomes and targets.

PERFORMANCE MEASURES	TARGETS	ACTUALS
Number of Fatalities	841.8	893.4
Number of Serious Injuries	7072.2	7194.2
Fatality Rate	1.004	1.082
Serious Injury Rate	8.444	8.681

Non-Motorized Fatalities and Serious Injuries	660.0	765.0

The above 2022 five-year average safety targets were the third year that the above (Question 35) prediction model and project benefit methods were used. The ACTUALS values in the above table are based on Virginia safety measure counts and VMT estimates available in July 2022 (HPMS 2022 VMT is not available at the time of this report).

All five measure targets submitted are anticipated to be exceeded (not met) based on the available 2022 data. Further, the 2022 measures are greater than the 2020 base year values. Although fatalities continued the increases that began in 2014, but they outpaced the predicted increases resulting in a five-year average greater than the target submitted. Serious injuries (SI) were predicted to continue to increase slightly resulting in the same for the 2022 five-year average targets. However, actual SI increases were larger with a rebound after the pandemic. Given the predicted VMT increases did not materialize, the preliminary 2022 fatality and serious injury rate targets were not met. Increases in pedestrian fatalities and SI also outpaced predictions so the associated non-motorized target is expected to also not be met.

At the request of the CTB, Virginia's HSIP and HSP project plans were reviewed in 2022 to focus on critical emphasis areas. New systemic safety infrastructure improvements are being programmed, adding in local jurisdictions, with some spot projects on the VDOT maintained network. In addition to NHTSA HSP behavioral programs, additional Virginia state funds are being focused on speeding, occupant protection and non-motorized campaigns.

Applicability of Special Rules

Does the VRU Safety Special Rule apply to the State for this reporting period?

No

Does the HRRR special rule apply to the State for this reporting period?

Yes

Provide the number of older driver and pedestrian fatalities and serious injuries 65 years of age and older for the past seven years.

PERFORMANCE MEASURES	2016	2017	2018	2019	2020	2021	2022
Number of Older Driver and Pedestrian Fatalities	126	159	144	170	144	179	190
Number of Older Driver and Pedestrian Serious Injuries	665	665	688	697	595	726	687

The rate of traffic fatalities and rate of serious injuries for drivers and pedestrians 65 years of age and older have not increased during the most recent 2-year period (two time periods of 5-year rolling average rates of fatalities and serious injuries using a 2-year spread), and therefore, the Older Drivers and Pedestrians Special Rule does not apply in VA for this fiscal year.

Evaluation

Program Effectiveness

How does the State measure effectiveness of the HSIP?

- Benefit/Cost Ratio
- Change in fatalities and serious injuries
- Lives saved

Based on the measures of effectiveness selected previously, describe the results of the State's program level evaluations.

VDOT is programming more systemic safety projects and is in interested in understanding the effectiveness of these projects. In 2018, VDOT began an effort to evaluate all HSIP-funded systemic improvement projects. Because systemic projects are usually deployed in several locations over one or multiple jurisdictions, it has proven to be difficult to gather accurate data or perform analysis on the overall effectiveness of these systemic improvement projects. As a result of the challenges encountered in previous evaluation efforts, VDOT established a project tracking tool designed to track newly implemented or planned HSIP-funded systemic projects. VDOT coordinates with all nine districts through monthly ‘office hours’, and VDOT districts provide updates to the systemic tracking inventory on a quarterly basis. These updates are the published to VDOT’s Open Data portal.

Systemic projects completed between 2018-2019 were evaluated using a simple before and after crash analysis. The results were inconclusive due to missing information on treatment sites. Based on the limitations of this evaluation, VDOT has created a robust tracking database of specific systemic treatment locations and installation dates. Once enough “post installation” time has passed, VDOT plans on using this new database to conduct a more extensive effectiveness analysis of the systemic improvements.

What other indicators of success does the State use to demonstrate effectiveness and success of the Highway Safety Improvement Program?

- # miles improved by HSIP
- HSIP Obligations
- More systemic programs

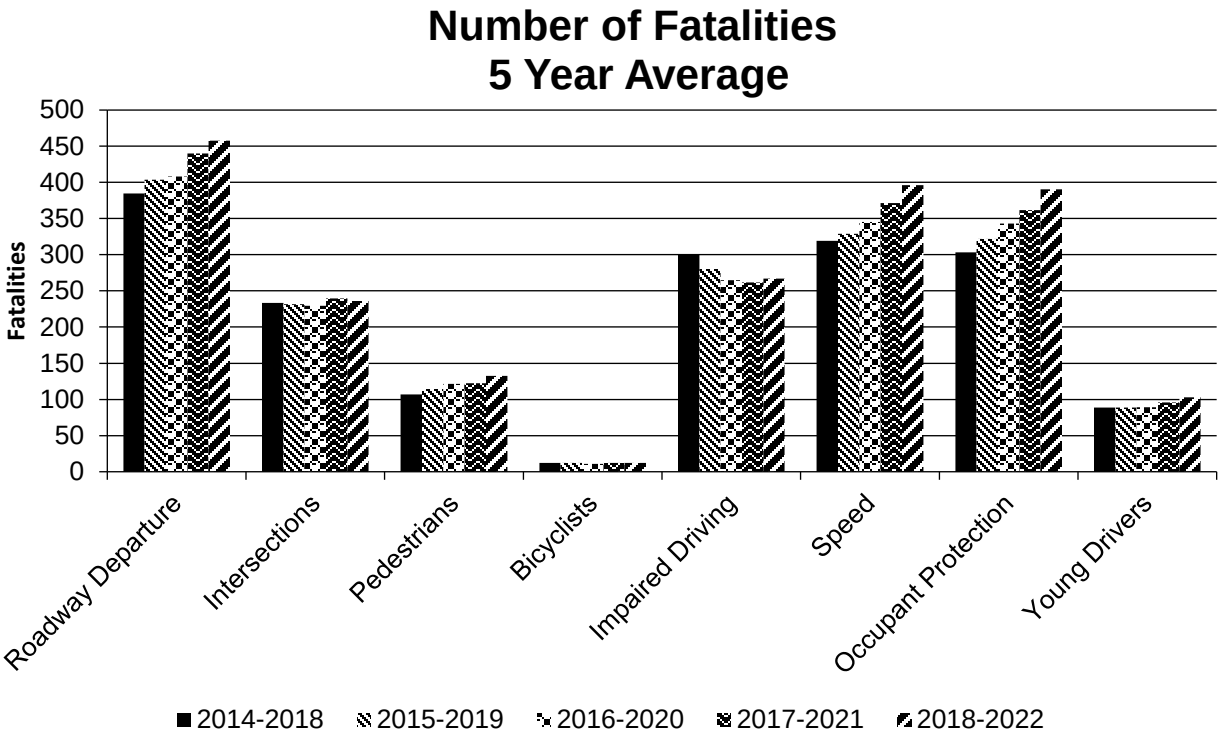
Effectiveness of Groupings or Similar Types of Improvements

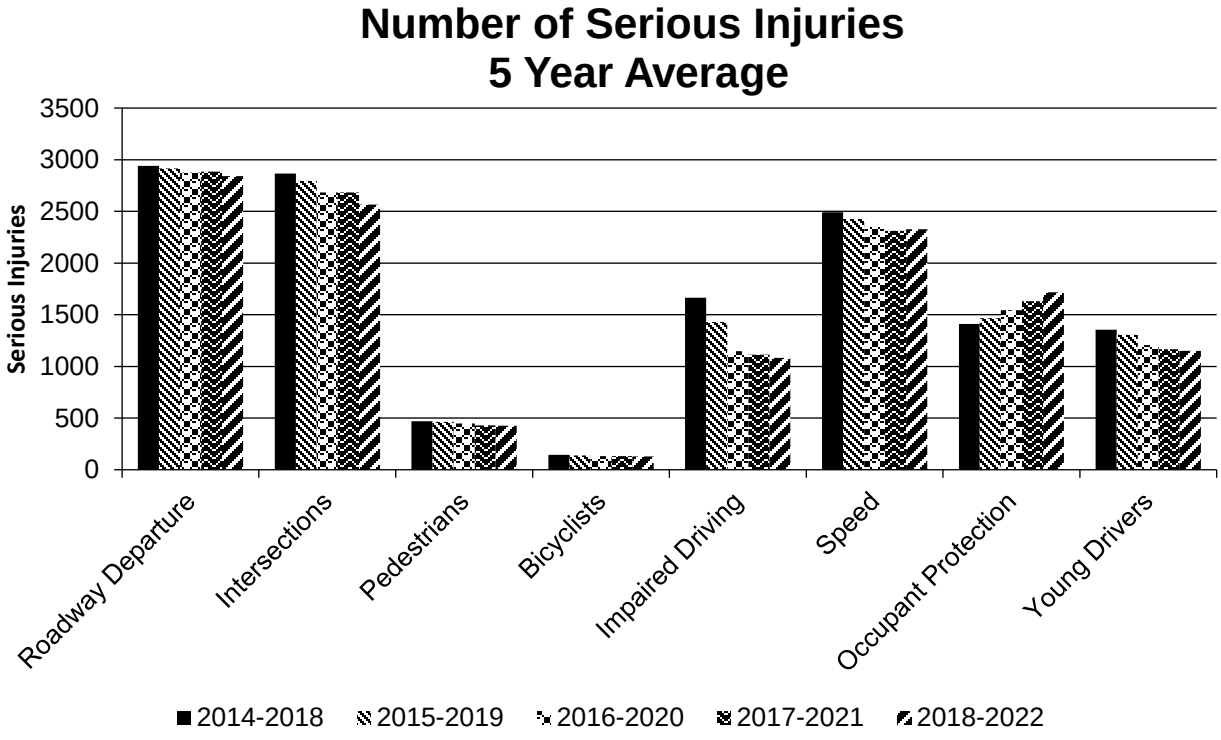
Present and describe trends in SHSP emphasis area performance measures.

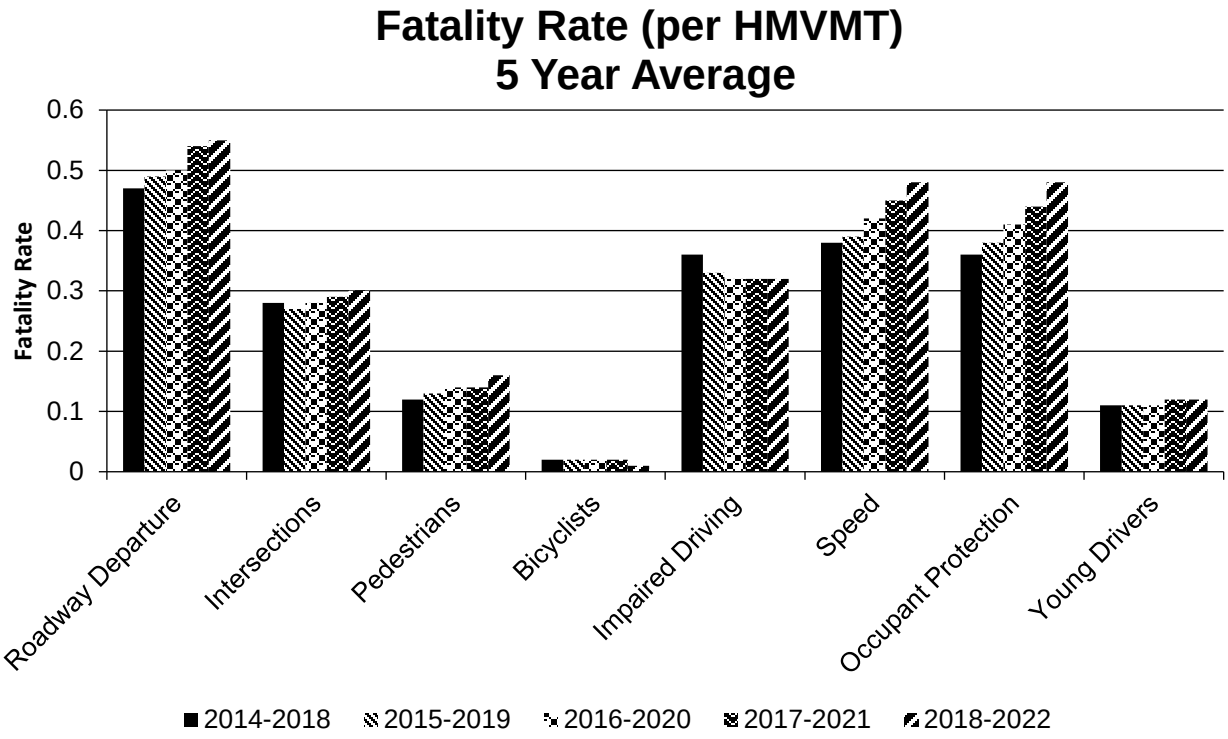
Year 2022

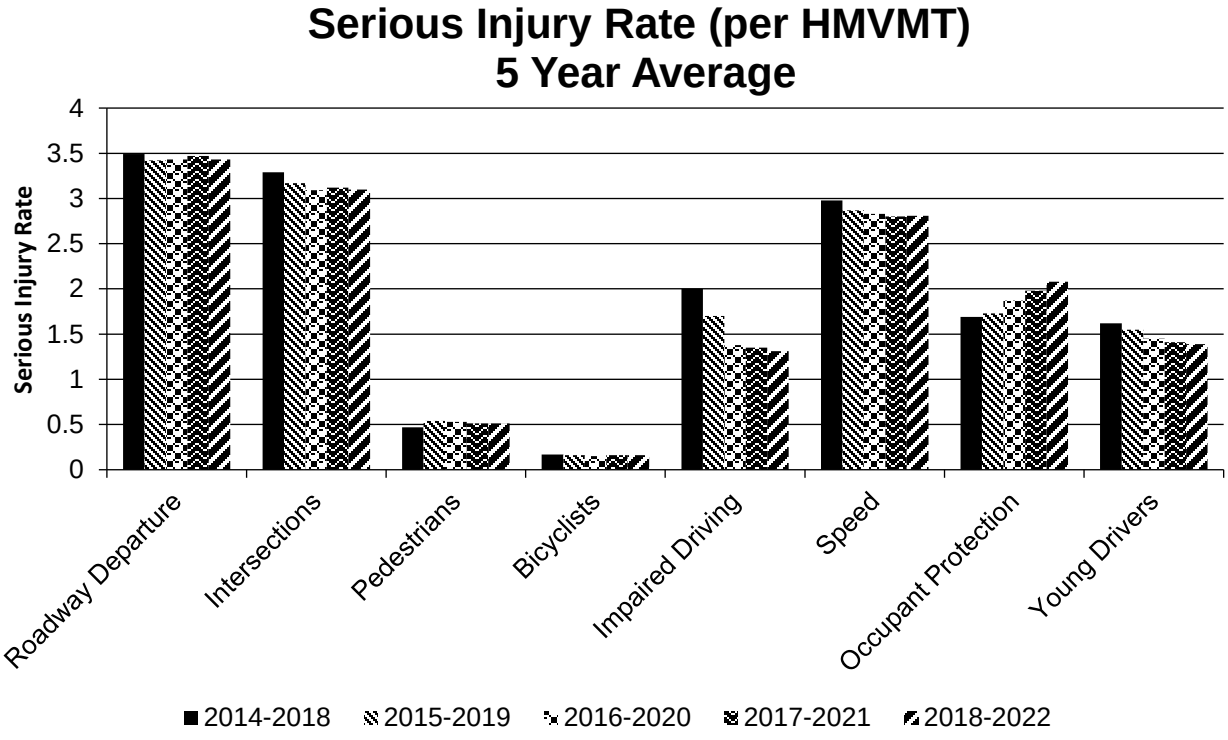
SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Roadway Departure	Run-off-road	457.6	2,842.8	0.55	3.43
Intersections	Intersections	236	2,564.4	0.3	3.1
Pedestrians	Vehicle/pedestrian	132.4	427.2	0.16	0.51

SHSP Emphasis Area	Targeted Crash Type	Number of Fatalities (5-yr avg)	Number of Serious Injuries (5-yr avg)	Fatality Rate (per HMVMT) (5-yr avg)	Serious Injury Rate (per HMVMT) (5-yr avg)
Bicyclists	Vehicle/bicycle	12.2	130.2	0.01	0.16
Impaired Driving	Other (define)	267	1,082.2	0.32	1.31
Speed	Speed-related	396	2,328.2	0.48	2.81
Occupant Protection	Other (define)	390.6	1,717.4	0.48	2.08
Young Drivers	Other (define)	102.8	1,150.6	0.12	1.39


Number of Fatalities
5 Year Average
Fatalities
500
450
400
350
300
250
200
150
100
50
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Number of Serious Injuries
5 Year Average
Serious Injuries
3500
3000
2500
2000
1500
1000
500
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Fatality Rate (per HMVMT)
5 Year Average
Fatality Rate
0.6
0.5
0.4
0.3
0.2
0.1
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022


Serious Injury Rate (per HMVMT)
5 Year Average
Serious Injury Rate
4
3.5
3
2.5
2
1.5
1
0.5
0
Roadway Departure
Intersections
Pedestrians
Bicyclists
Impaired Driving
Speed
Occupant Protection
Young Drivers
2014-2018
2015-2019
2016-2020
2017-2021
2018-2022

Project Effectiveness

Provide the following information for previously implemented projects that the State evaluated this reporting period.

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
107043	Interstate	Interchange design	Installation of new lane on ramp	4.00	18.00				1.00	1.00	5.00	5.00	24.00	
100656	URBAN PRINCIPAL ARTERIAL	Pedestrians and bicyclists	Install sidewalk	29.00	21.00			5.00	2.00	17.00	7.00	51.00	30.00	
104664	Other Principal Arterial	Intersection traffic control	Modify control – new traffic signal	255.00	253.00	1.00	1.00	13.00	9.00	114.00	73.00	383.00	336.00	
106240	Other Principal Arterial	Pedestrians and bicyclists	Install new crosswalk	85.00	112.00			3.00	4.00	43.00	41.00	131.00	157.00	
106975	Major Collector			5.00	9.00			1.00	2.00	3.00	1.00	9.00	12.00	
107023	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	227.00	227.00	2.00		14.00	13.00	86.00	88.00	329.00	328.00	
107046	Other Principal Arterial	Speed management	Speed management - other	49.00	50.00			3.00	4.00	9.00	7.00	61.00	61.00	
107062	Other Principal Arterial	Intersection traffic control	Intersection flashers –sign-mounted or overhead	25.00	20.00	2.00		3.00	3.00	17.00	8.00	47.00	31.00	
107715	URBAN INTERSTATE	Interchange design	Interchange improvements	416.00	522.00	4.00	2.00	19.00	25.00	96.00	164.00	535.00	713.00	
107769	Interstate	Roadway signs and traffic control	Roadway signs (including post) - new or updated	3565.00	3813.00	8.00	16.00	109.00	173.00	1119.00	1069.00	4801.00	5071.00	
107795	Interstate	Interchange design	Interchange improvements	49.00	57.00		1.00	3.00	2.00	18.00	24.00	70.00	84.00	
108789	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	6.00	6.00				1.00	10.00	10.00	16.00	17.00	
108791	Minor Arterial	Intersection traffic control	Modify traffic signal – add flashing yellow arrow	94.00	92.00		4.00	10.00	5.00	115.00	72.00	219.00	173.00	

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
108889	Other Principal Arterial	Pedestrians and bicyclists	Install new crosswalk											
108946	Interstate	Interchange design	Extend existing lane on ramp	16.00	33.00	1.00	1.00	2.00	3.00	12.00	6.00	31.00	43.00	
109590	Minor Arterial	Pedestrians and bicyclists	Install sidewalk	16.00	8.00					12.00		28.00	8.00	
109702	Minor Arterial	Advanced technology and ITS	Adaptive Signal Control System	48.00	50.00			3.00	3.00	29.00	27.00	80.00	80.00	
109889	Major Collector	Roadway	Pavement surface – high friction surface	279.00	258.00	5.00	5.00	39.00	27.00	110.00	98.00	433.00	388.00	
111315	Other Principal Arterial	Intersection traffic control	Intersection flashers –sign-mounted or overhead	6.00	6.00	1.00		3.00	1.00	1.00	5.00	11.00	12.00	
111549	Other Principal Arterial	Access management	Median crossover - relocate/close crossover	13.00	3.00					14.00	1.00	27.00	4.00	
111746	Other Principal Arterial	Intersection traffic control	Intersection flashers –sign-mounted or overhead	3.00	2.00	1.00		2.00		2.00	2.00	8.00	4.00	
111832	Other Principal Arterial	Roadway	Rumble strips – edge or shoulder	594.00	444.00		9.00	39.00	28.00	267.00	166.00	900.00	647.00	
112245	Other Principal Arterial	Intersection traffic control	Modify control – new traffic signal	41.00	21.00			4.00		25.00	11.00	70.00	32.00	
112302	Minor Arterial	Intersection traffic control	Modify control – new traffic signal	8.00	9.00					3.00	3.00	11.00	12.00	
112530	Other Principal Arterial	Advanced technology and ITS	Adaptive Signal Control System											
112536	Other Principal Arterial	Intersection traffic control	Modify control – new traffic signal	10.00	8.00			2.00		11.00	3.00	23.00	11.00	
112819	Other Principal Arterial	Intersection traffic control	Modify control – new traffic signal	11.00	6.00					2.00	2.00	13.00	8.00	
112887	Minor Arterial	Roadway	Rumble strips – center	544.00	463.00	18.00	18.00	58.00	61.00	205.00	183.00	825.00	725.00	

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
112894	Major Collector	Pedestrians and bicyclists	Install new crosswalk	5.00	3.00					1.00		6.00	3.00	
112897	Interstate	Interchange design	Acceleration / deceleration / merge lane	46.00	44.00		2.00	7.00	4.00	17.00	26.00	70.00	76.00	
113366	Minor Arterial	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)	114.00	102.00		1.00	8.00	3.00	38.00	9.00	160.00	115.00	
113367	Minor Arterial	Shoulder treatments	Widen shoulder – paved or other (includes add shoulder)											
113436	Major Collector	Intersection traffic control	Modify control – new traffic signal	14.00	8.00					5.00	1.00	19.00	9.00	
113542	Major Collector	Pedestrians and bicyclists	Install new crosswalk											
113594	Other Principal Arterial			15.00	27.00	1.00		3.00	5.00	5.00	12.00	24.00	44.00	
113596	Other Principal Arterial	Intersection geometry	Intersection geometry - other	15.00	31.00			3.00	6.00	6.00	15.00	24.00	52.00	
114026	Other Principal Arterial	Intersection traffic control	Intersection flashers –sign-mounted or overhead	28.00	24.00				6.00	8.00	8.00	36.00	38.00	
114402	Other Principal Arterial	Access management	Median crossover - relocate/close crossover	4.00	2.00				1.00	5.00	2.00	9.00	5.00	
114713	Other Principal Arterial	Intersection geometry	Innovative Intersection (e.g. MUT, RCUT, QR)	32.00	19.00			1.00	2.00	15.00	7.00	48.00	28.00	
114733	Minor Arterial	Pedestrians and bicyclists	Install new crosswalk											
114738	Other Principal Arterial	Intersection traffic control	Modify traffic signal – add backplates with retroreflective borders	5.00	2.00					1.00		6.00	2.00	

LOCATION	FUNCTIONAL CLASS	IMPROVEMENT CATEGORY	IMPROVEMENT TYPE	PDO BEFORE	PDO AFTER	FATALITY BEFORE	FATALITY AFTER	SERIOUS INJURY BEFORE	SERIOUS INJURY AFTER	ALL OTHER INJURY BEFORE	ALL OTHER INJURY AFTER	TOTAL BEFORE	TOTAL AFTER	EVALUATION RESULTS (BENEFIT/COST RATIO)
114771	Major Collector	Advanced technology and ITS	Intersection Conflict Warning System (ICWS)	10.00	8.00	1.00				5.00	3.00	16.00	11.00	
104679	Minor Arterial	Intersection traffic control	Modify control – Modern Roundabout	4.00	1.00					1.00		5.00	1.00	
106513	Other Principal Arterial	Roadway	Rumble strips – edge or shoulder	46.00	57.00	2.00	1.00	4.00	2.00	14.00	13.00	66.00	73.00	
107051	Minor Arterial	Roadway	Rumble strips – edge or shoulder	8.00	15.00			1.00	1.00	4.00	5.00	13.00	21.00	
109512	Interstate	Roadside	Barrier – cable	32.00	43.00	1.00		3.00	5.00	10.00	9.00	46.00	57.00	
109583	Minor Arterial	Roadway	Rumble strips – edge or shoulder	3.00	4.00			3.00		3.00	2.00	9.00	6.00	
109584	Minor Arterial	Roadside	Barrier - other	3.00	2.00			3.00	2.00	3.00	2.00	9.00	6.00	
111093	Other Principal Arterial	Roadway	Rumble strips – edge or shoulder	18.00	21.00			3.00	3.00	8.00	7.00	29.00	31.00	
112500	Interstate	Roadside	Barrier – cable	10.00	13.00	2.00	1.00	3.00	1.00	9.00	8.00	24.00	23.00	
114188	Other Principal Arterial	Roadway	Rumble strips – edge or shoulder	25.00	23.00			1.00		7.00	11.00	33.00	34.00	
114190	Other Principal Arterial	Roadway	Rumble strips – edge or shoulder	22.00	37.00			3.00	6.00	11.00	15.00	36.00	58.00	

Compliance Assessment

What date was the State's current SHSP approved by the Governor or designated State representative?

05/12/2022

What are the years being covered by the current SHSP?

From: 2022 To: 2026

When does the State anticipate completing it's next SHSP update?

2027

Provide the current status (percent complete) of MIRE fundamental data elements collection efforts using the table below.

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
ROADWAY SEGMENT	Segment Identifier (12) [12]	100	100					100	100	100	100
	Route Number (8) [8]	100	100								
	Route/Street Name (9) [9]	100	100								
	Federal Aid/Route Type (21) [21]	100	99								
	Rural/Urban Designation (20) [20]	100	100					100	7		
	Surface Type (23) [24]	100	97					100	6		
	Begin Point Segment Descriptor (10) [10]	100	100					100	100	100	100
	End Point Segment Descriptor (11) [11]	100	100					100	100	100	100
	Segment Length (13) [13]	100	100								
	Direction of Inventory (18) [18]	100	100								
	Functional Class (19) [19]	100	100					100	100	100	100

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Median Type (54) [55]	96	93								
	Access Control (22) [23]	100	100								
	One/Two Way Operations (91) [93]	99	96								
	Number of Through Lanes (31) [32]	97	94					99	6		
	Average Annual Daily Traffic (79) [81]	98	97					94	4		
	AADT Year (80) [82]	98	97								
	Type of Governmental Ownership (4) [4]	100	100					100	100	100	100
INTERSECTION	Unique Junction Identifier (120) [110]			85							
	Location Identifier for Road 1 Crossing Point (122) [112]			100							
	Location Identifier for Road 2 Crossing Point (123) [113]			100							
	Intersection/Junction Geometry (126) [116]			85							
	Intersection/Junction Traffic Control (131) [131]			50							
	AADT for Each Intersecting Road (79) [81]			92	56						
	AADT Year (80) [82]			92	56						
	Unique Approach Identifier (139) [129]			100							
INTERCHANGE/RAMP	Unique Interchange Identifier (178) [168]										
	Location Identifier for Roadway at					100					

ROAD TYPE	*MIRE NAME (MIRE NO.)	NON LOCAL PAVED ROADS - SEGMENT		NON LOCAL PAVED ROADS - INTERSECTION		NON LOCAL PAVED ROADS - RAMPS		LOCAL PAVED ROADS		UNPAVED ROADS	
		STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE	STATE	NON-STATE
	Beginning of Ramp Terminal (197) [187]										
	Location Identifier for Roadway at Ending Ramp Terminal (201) [191]					100					
	Ramp Length (187) [177]					100	100				
	Roadway Type at Beginning of Ramp Terminal (195) [185]					100					
	Roadway Type at End Ramp Terminal (199) [189]					100					
	Interchange Type (182) [172]										
	Ramp AADT (191) [181]					68	75				
	Year of Ramp AADT (192) [182]					68	75				
	Functional Class (19) [19]					100	78				
	Type of Governmental Ownership (4) [4]					100	100				
Totals (Average Percent Complete):		**99.33**	**98.50**	**88.00**	**14.00**	**76.00**	**38.91**	**99.22**	**58.11**	**100.00**	**100.00**

*Based on Functional Classification (MIRE 1.0 Element Number) [MIRE 2.0 Element Number]

Describe actions the State will take moving forward to meet the requirement to have complete access to the MIRE fundamental data elements on all public roads by September 30, 2026.

VDOT follows the 10-step VDOT MIRE FDE Implementation Plan to meet the requirement to have complete access to the MIRE Fundamental Data Elements (FDE) on all public roads. VDOT has completed steps 5 and 6 which include a detailed data collection plan and the cost estimate for collecting the remaining data, and has moved forward to step 7,8 and 9 to start the data collection based on available funding resources. This fiscal year, VDOT initiated a pilot project to collect intersection data elements to address the identified data gaps in one of VDOT Districts. In a separate task, VDOT is in the process of completing statewide Interchange inventory including unique interchange identifies and interchange types . The responses to Question 49 have been updated based on recent data collection. As more funding sources have been identified, VDOT will continue to collect all remaining data needed to have complete access to the MIRE fundamental data elements on all public roads.

Optional Attachments

Program Structure:

FINAL_VDOT_HSIP_Implementation_Manual.pdf
Project Implementation:

Safety Performance:

Evaluation:

Compliance Assessment:

Glossary

5 year rolling average: means the average of five individuals, consecutive annual points of data (e.g. annual fatality rate).

Emphasis area: means a highway safety priority in a State's SHSP, identified through a data-driven, collaborative process.

Highway safety improvement project: means strategies, activities and projects on a public road that are consistent with a State strategic highway safety plan and corrects or improves a hazardous road location or feature or addresses a highway safety problem.

HMVMT: means hundred million vehicle miles traveled.

Non-infrastructure projects: are projects that do not result in construction. Examples of non-infrastructure projects include road safety audits, transportation safety planning activities, improvements in the collection and analysis of data, education and outreach, and enforcement activities.

Older driver special rule: applies if traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increases during the most recent 2-year period for which data are available, as defined in the Older Driver and Pedestrian Special Rule Interim Guidance dated February 13, 2013.

Performance measure: means indicators that enable decision-makers and other stakeholders to monitor changes in system condition and performance against established visions, goals, and objectives.

Programmed funds: mean those funds that have been programmed in the Statewide Transportation Improvement Program (STIP) to be expended on highway safety improvement projects.

Roadway Functional Classification: means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Strategic Highway Safety Plan (SHSP): means a comprehensive, multi-disciplinary plan, based on safety data developed by a State Department of Transportation in accordance with 23 U.S.C. 148.

Systematic: refers to an approach where an agency deploys countermeasures at all locations across a system.

Systemic safety improvement: means an improvement that is widely implemented based on high risk roadway features that are correlated with specific severe crash types.

Transfer: means, in accordance with provisions of 23 U.S.C. 126, a State may transfer from an apportionment under section 104(b) not to exceed 50 percent of the amount apportioned for the fiscal year to any other apportionment of the State under that section.